LIFE

SPECIAL ISSUE

FOOD

MASS LUXURY: A $73 BILLION MARKET BASKET

20 CENTS

JANUARY 3, 1955

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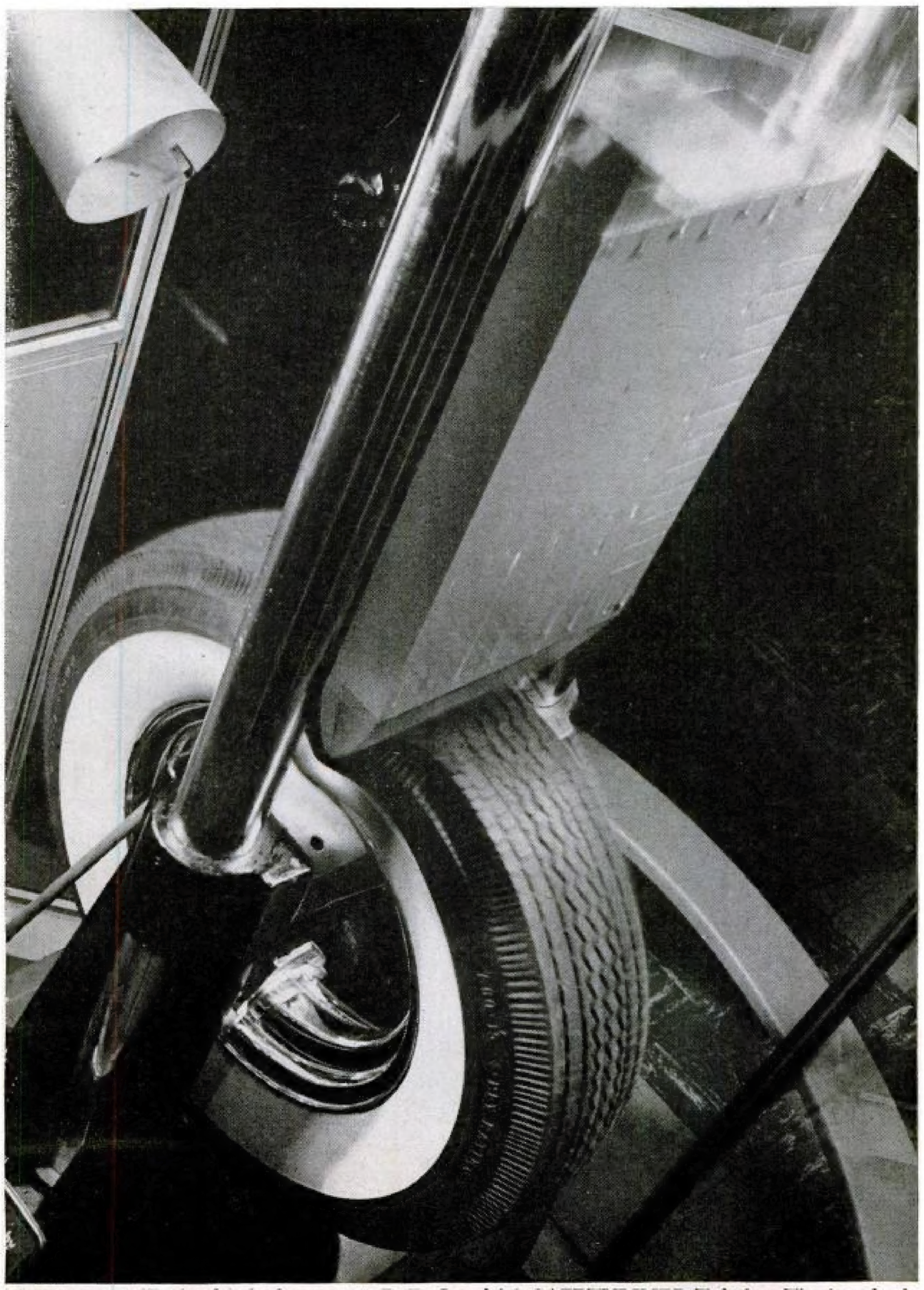
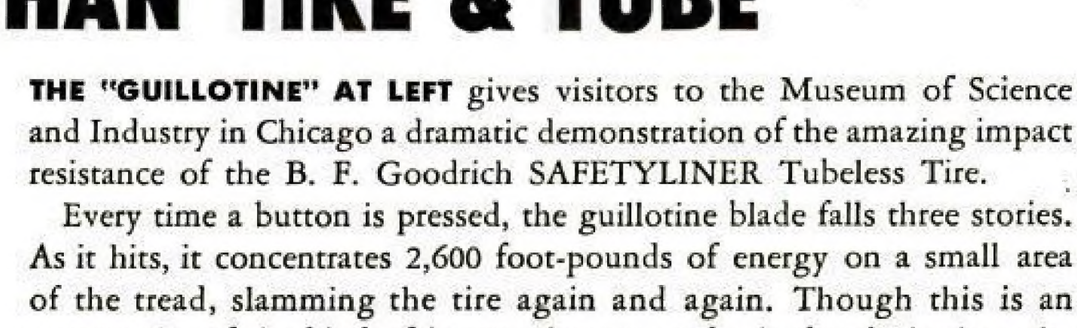


This heavy guillotine blade drops on a B. F. Goodrich SAFETYLINER Tubeless Tire hundreds of times, demonstrating the ability of these tires to resist bruises and breaks.

THE "GUILLOTINE" AT LEFT gives visitors to the Museum of Science and Industry in Chicago a dramatic demonstration of the amazing impact resistance of the B. F. Goodrich SAFETYLINER Tubeless Tire.

Every time a button is pressed, the guillotine blade falls three stories. As it hits, it concentrates 2,600 foot-pounds of energy on a small area of the tread, slamming the tire again and again. Though this is an *exaggeration* of the kind of impact that causes bruise-breaks in tires, the SAFETYLINER is unharmed. Streamlined, smoother-riding, the B. F. Goodrich SAFETYLINER Tubeless Tire was specially designed for the punishing service of today's high-powered cars. Leading car-makers have made it standard equipment on 1955 models!

The SAFETYLINER Tubeless Tire is made by the *inventor* of Tubeless Tires, B. F. Goodrich. It's backed by over 5 million B. F. Goodrich Tubeless Tires sold, 60 *billion* miles rolled. Get B. F. Goodrich SAFETY-LINER Tubeless Tires at your B. F. Goodrich retailer, listed in the Yellow Pages under "Tires—B. F. Goodrich." Convenient terms.



CHANGES BRUISE BLOWOUTS TO SAFE S-S-SLOWOUTS
A patented inner liner replaces the inner tube in the B. F. Goodrich SAFETYLINER Tubeless Tire. It turns bruise blowouts (left) into safe s-s-slowouts (right), gives more time for a safe stop.

STOPS YOU IN TIME WHEN YOU NEED TO STOP
In locked-wheel stopping tests on smooth, wet roads, B. F. Goodrich SAFETYLINER Tubeless Tires stopped in 17% less distance than previous new-car tires. On curves where previous new-car tires squealed, a revolution-ary tread design makes SAFETYLINER almost silent.

B. F. GOODRICH, THE INVENTOR, GIVES YOU TWO GREAT TUBELESS TIRES TO CHOOSE FROM: 1. SAFETYLINER—the new-car Tubeless with the 6-year lead, that costs no more than a tire and tube. **2.** LIFE-SAVER—the Tubeless with the mostest, that seals punctures permanently. Also available in *nylon* cords.

There are more B. F. Goodrich Tubeless Tires in use than all other makes combined

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LIFE

REG. U.S. PAT. OFF.

Vol. 38, No. 1 Jan. 3, 1955

A TRIUMPH AND AN

SOME THOUGHTS TO PREFACE AN ISSUE ABOUT FOOD,

AMERICANS who are as well fed as any people in the world are also prize specimens of what good feeding does to a people. Each generation is taller, bigger and healthier than the preceding one —and each has a longer life expectancy.

Some Americans may eat too much. As Adlai Stevenson remarked, ours is the only country where overeating is a problem. But the single healthiest thing about the nation itself may well be that it can turn out not only enough food for all—plus more than enough income to buy it—but actually more food than the U.S. uses. Despite a 50% increase in population in three decades, despite the fact that total available farm acreage has not increased very much, American technology keeps on getting bigger yields of food out of the same amount of land. This is an incredible accomplishment, one to which LIFE devotes this special issue.

A few simple facts illustrate how enormous an achievement it is. In 1800, just after the Reverend Thomas Malthus wrote his famous prediction that population would always outrun any nation's food supply, the U.S. had 5.3 million people, most of them farmers, each of whom could produce enough to feed himself plus one third of the needs of a second person. By 1955, with 163.5 million population, the U.S. had been able to take 88% of its people out of agriculture, yet the remaining 12% is producing enough to feed 17 other people in addition to each farmer.

The change has been more profound than that. Americans once had to be pretty self-sufficient, pretty local and pretty seasonal in their diet. Greenstuff could be had only in summer, fresh meat only on slaughter. For the winter months everything had to be dried, smoked or steeped in brine; dried apples, salted codfish, beef and pork chopped up in "mincemeat" to be preserved in spices—such was the American diet. That famous country store of nostalgic memory had its big wheel of cheese, its open box of dried apples, its barrels from which the grocer scooped up sugar, beans or chocolate creams—all kept in bulk, all redolent with a hundred smells sometimes intermingled with a whiff of the kerosene barrel in the back. All this has been transformed by successive revolutions in transport, refrigeration and packaging.

THESE revolutions take their toll in expense, so much so that 55¢ of every dollar spent for food—and food is America's biggest business—now goes to the handling, packaging and moving of it. However, the steps saved by these "servants" enable Americans to use the time more profitably, so that the share of the individual's income which goes for food has been reduced, in two generations, from 45% to less than 25%.

Moreover, without these services such fantastic agglomerations of peoples as Greater New York's would be impossible; even with them the herculean job of feeding 15 million people is a daily miracle that somehow gets performed (*pp. 22–30*). These revolutions not only created a national diet enabling Maine potato-growers to eat California lettuce as easily as Californians can get Maine lobsters, but also have given rise to that uniquely American institution, the supermarket (*pp. 38, 39*), which more than any other American phenomenon, fascinates all foreign visitors. Its familiar cart, shown on the cover, carries a large percentage of the $73 billion food basket which the U.S. creates and consumes each year. It has also created the national folkway of the lunch hour (*pp. 67–71*) which embraces infinite variations. All this adds to the general good humor, as well as flatulence, while creating a boom in indigestion remedies (*pp. 72–75*).

A growing number of Americans (6.5 million) who own deep freezers, now keep miniature supermarkets of their own, which are being turned into a handy storehouse of entire meals, already prepared, which need only heating for completion. These are only one of many time-savers which help the modern housewife find more leisure (*pp. 16–20*). If Continental epicures look down their noses at such gastronomic barbarities, when the U.S. housewife really wants to cook she can silence (if not conquer) them with wholly American specialties such as turkey hash (*pp. 61–65*).

Actually, nearly all Americans not only enjoy a national diet but a *luxury* diet. Their land is so increasingly productive that they can afford the luxury of using up 10 calories of corn and forage to produce *one* calory of beef. Moreover, they now eat more beef than any other meat. This seeming extravagance is made possible by technology's continuing increase in the yield of *corn per acre*, as well as *beef per bushel of corn*. Since 1935 corn yields per acre have increased 58%, milk per cow 24%, eggs per hen 42%, while the use of female sex hormones (*p. 89*) on bulls is helping them to grow fatter. Part of this increase comes from mechanizing some farms into split-second commercial operations that rival a factory assembly line (*pp. 40–43*). But even family farms like that of Iowa's Bruenes (*pp. 44–56*) increase their productivity every year through chemical nutrients, insecticides, rotation, contour plowing, and new boons from research.

All this gives Americans plenty of reason to be proud but not to be smug. The abundance which includes $6.6 billion of surplus food, bulging in government warehouses, helps Americans forget the fact that most of the rest of the world lacks adequate food and that more than half of its people are seriously underfed.

Yet neither the American luxury diet nor the prosperity of the

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ABBREVIATIONS: CEN., CENTER; EXC., EXCEPT; LT., LEFT; RT., RIGHT; T., TOP. THE ASSOCIATED PRESS IS EXCLUSIVELY ENTITLED TO THE REPUBLICATION WITHIN THE U.S. OF THE PICTURES HEREIN ORIGINATED OR OBTAINED FROM THE ASSOCIATED PRESS.

OBLIGATION

THE NATION'S BIGGEST BUSINESS

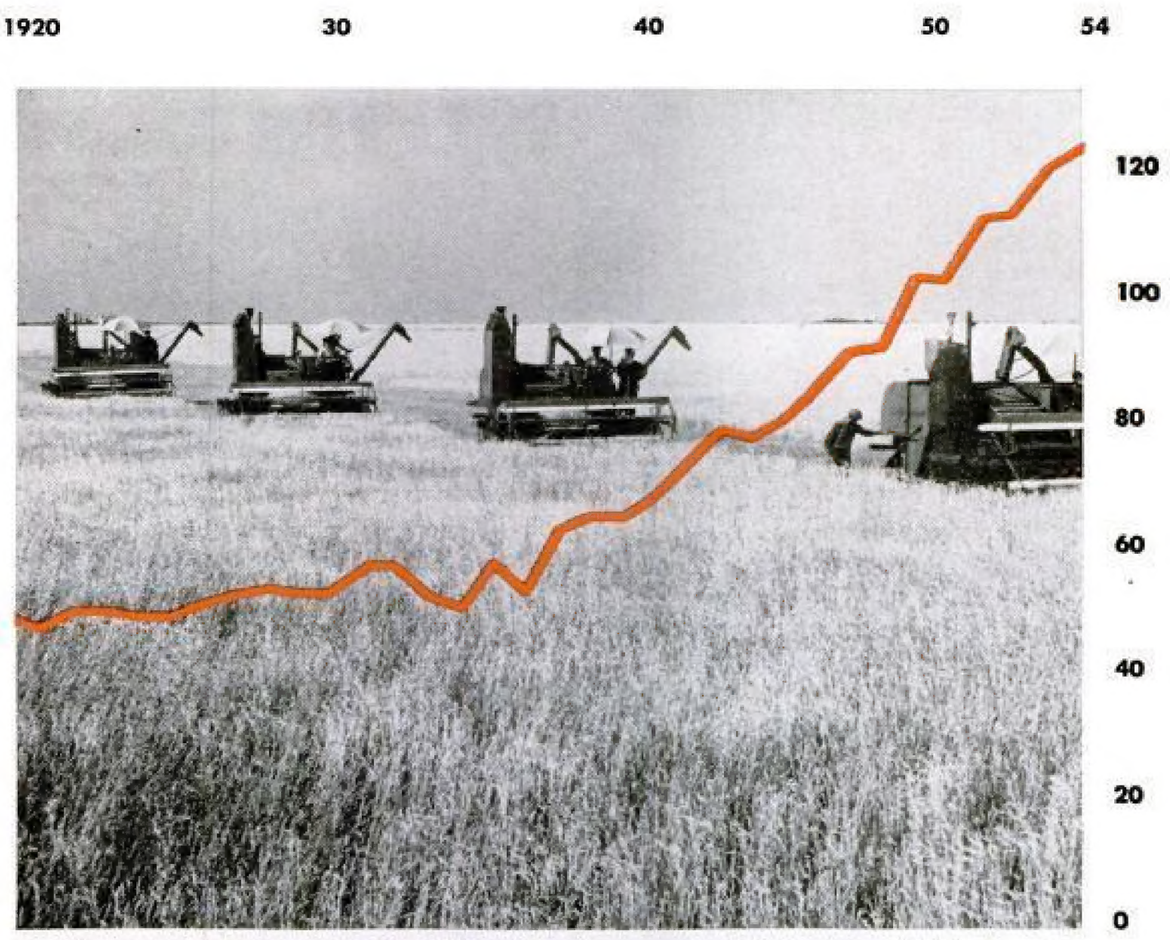
American farmer are independent of the rest of the world. Our farm prosperity began with the development of export markets for wheat, cotton and tobacco, and the growers of these crops still export about 20% of their crops. Without coffee, tea, bananas, pepper, spices and a long list of other imports, the American diet would lose half its variety; in fact we import even more food in dollar terms than we sell abroad. Taken as a whole, food and agriculture represent America's greatest single stake in foreign trade, both on the export and on the import side. The Department of Agriculture should logically be the strongest advocate of a more liberal foreign trade policy, as in fact the cotton states have historically been. But the long farm depression of the '20s and its upshot in domestic price supports turned agriculture into a protected and protectionist industry at odds with the State Department's efforts to liberalize trade for the past 20 years. Secretary Benson's recent reforms in farm price support policy are merely the first step toward getting our domestic and our international food markets back into a common price system.

FOOD is perhaps America's biggest weapon in the cold war—as the 1953 distribution of food to East Germans demonstrated. A greater world trade in food would do much to alleviate hunger outside American shores. But trade is not the ultimate answer to this problem, for no matter how rapidly the U.S. and other food exporters increase their production, the world's population (much of it too poor to buy the food that exists) increases even faster. The spread of antibiotic wonder drugs in recent years has cut the death rate so much that the world's population is increasing at the staggering rate of 25 million people per year. America's own is growing so rapidly that a population of 200 million is expected by 1970. This prospect makes many a neo-Malthusian predict that before long most of the world will be either starving or living off algae, and covered (as one has put it) "completely and to a considerable depth with a writhing mass of human beings much as a dead cow is covered with a pulsating mass of maggots."

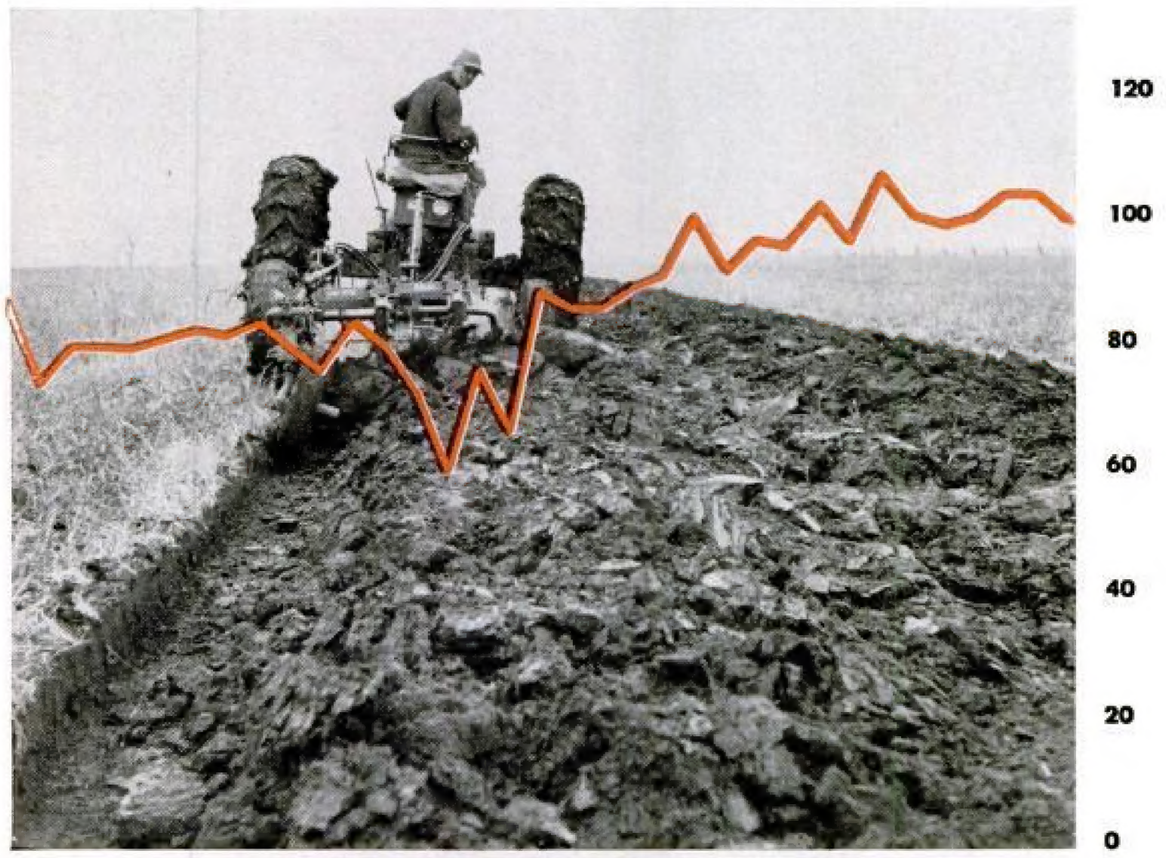
The neo-Malthusians may be right about the long-term dangers, but there are ways by which these dangers may be averted. There is no evidence that America faces the menace at all. As for other nations, history shows that whenever a people has been able to industrialize, taking workers off the farms, the birth rate has leveled off as it did in Malthus' own England. Likely the same thing would happen in India and other populous countries which have not been able to industrialize because 90% of their people live on the land, and scratch such poor livings from it that they cannot provide the savings which building a national industry requires. Cal Tech's Geochemist Harrison Brown, who dwells on this problem in his *The Challenge of Man's Future*, estimates that the U.S. alone, by spending $4 billion to $5 billion a year, for half a century, could enable the underfed half of the world to industrialize itself.

The well-fed U.S. forgets that most of this semistarved half of the world is still using Biblical methods of agriculture. From 3,000 B.C. to the beginning of the 19th Century only a few significant advances were made in the science of agriculture—use of the horse collar, the scythe, and the "cradle" for the scythe. The underdeveloped parts of the world never got beyond these advances; most of it still plows with a bent stick. Most of its grain is still harvested with sickles. Egyptian fields are still irrigated by "the drawer of water." In Indonesia women cut off the rice heads one at a time with a little knife.

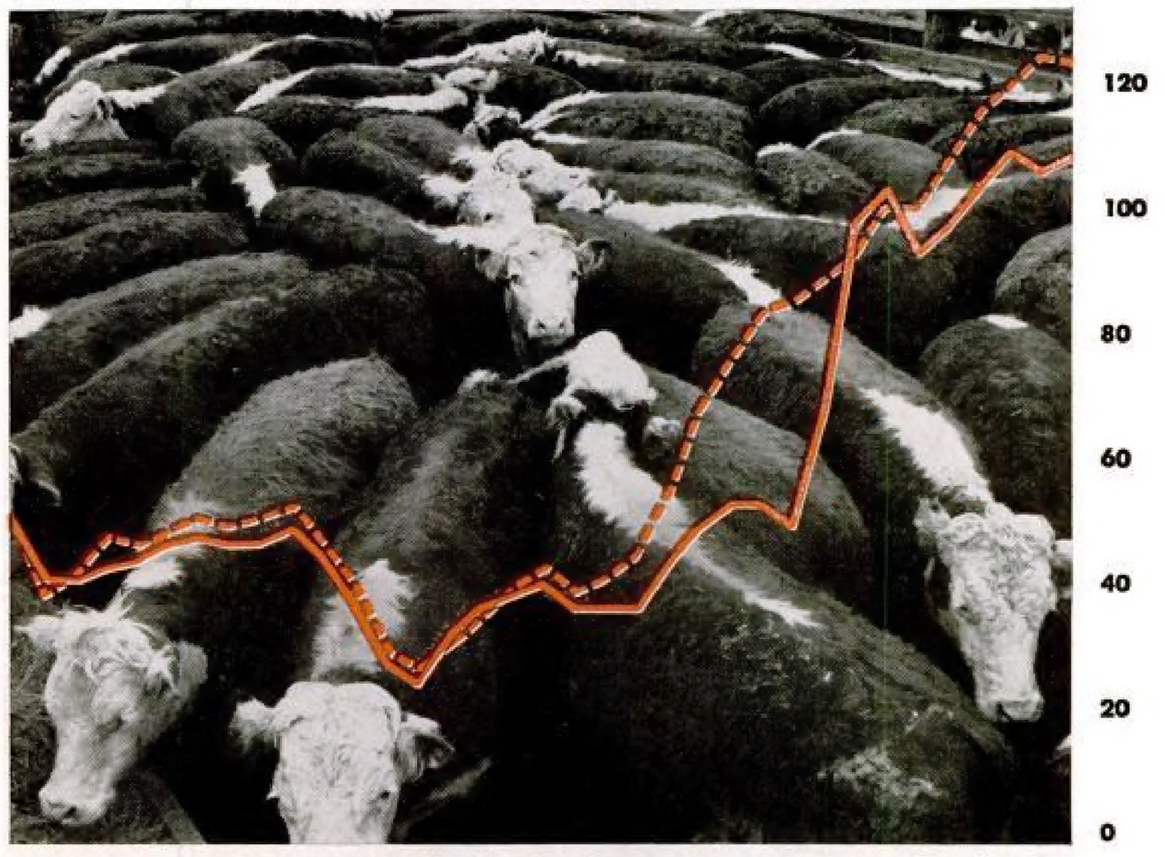
Agronomists estimate that if current knowledge were applied to all the world's tillable and potentially tillable land, it could feed a population two to four times greater than its present 2.5 billion. Thus, the real challenge of American abundance is to find the means, through a bold and imaginative world economic program, not to *feed* the rest of the world but to spread the technology which will enable it to industrialize and feed itself.



FARM OUTPUT PER MAN HOUR has increased 146% since 1920. Despite drop in labor force, specialized mechanized equipment has helped raise total production by 51%. In scale at right (*as in all charts*) the 1947-49 average is 100.



CROP PRODUCTION PER ACRE (*red line*) hit low point in the Depression and Dust Bowl years. Thanks to conservation practices, new fertilizers, improved seeds and more efficient use of land, production is now 14% above the 1920 level.

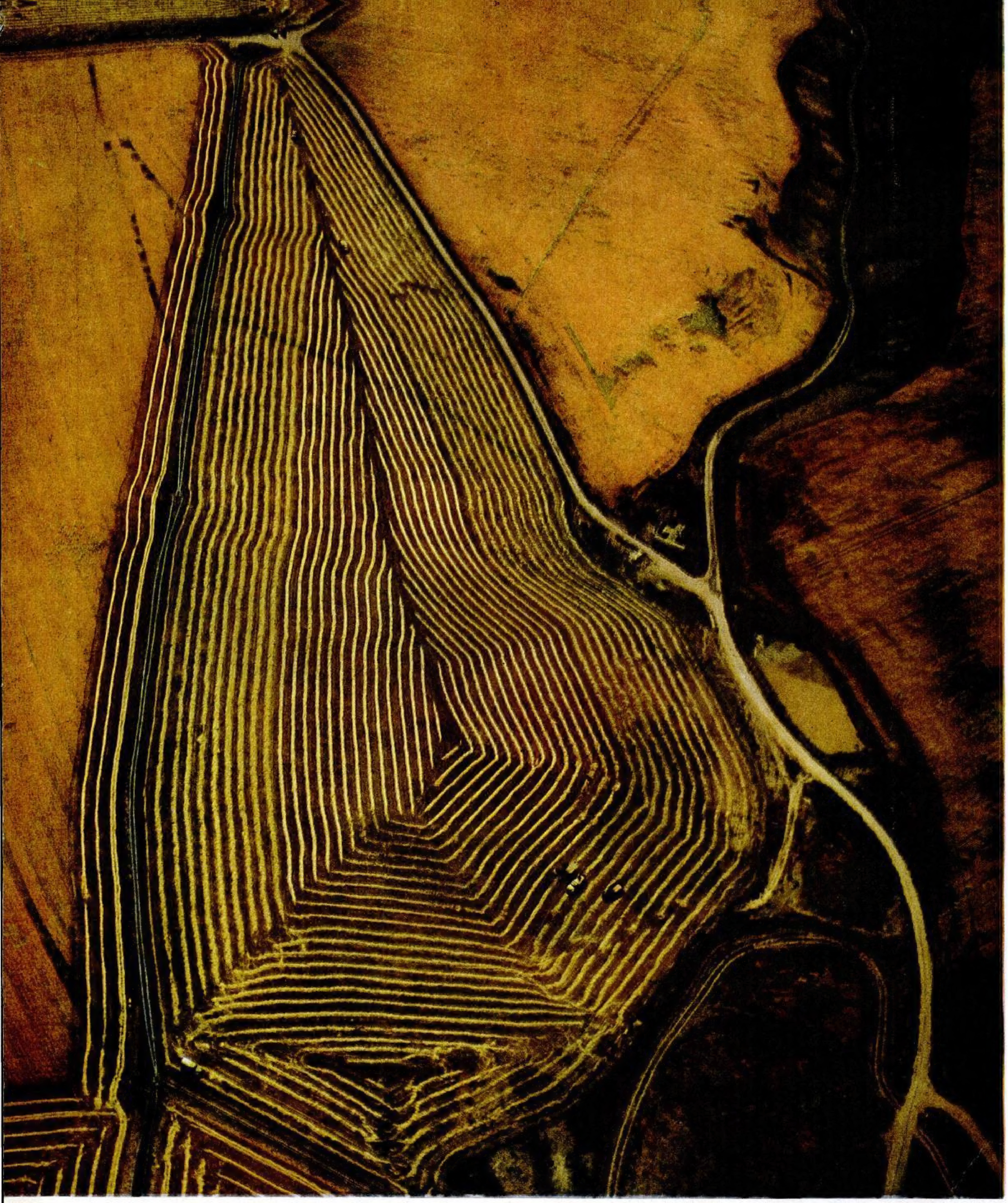


EATING AND EARNING are closely related in meat consumption. Retail value of meat consumed per person (*red line*) is high when incomes (*broken line*) are high. The value line lags during war years when controls kept meat prices down.

THE BASE OF ABUNDANCE

Photographed for LIFE by MARGARET BOURKE-WHITE

PRODUCTIVE LANDS where America grows its food yield almost twice as richly as they did at the beginning of the century—a yield expressed in billions of bushels of wheat and corn, millions of gallons of fruit juice, billions of dozens of eggs. But statistics cannot express the beauty of the land. Close up, the growing of food is as distinct as a cornstalk or a fence post or a man on a tractor. From aloft the land unfolds, flowing unchecked to the far horizons and falling into patterns undreamed of below. Row on die-straight row of beans (*above*) inscribe rich Florida muckland. In Nebraska (*opposite page*) green corn and golden oat stubble weave along the contours of gentle hills. Here, in some small portion of its diverse whole, is the land, the base of America's abundance.



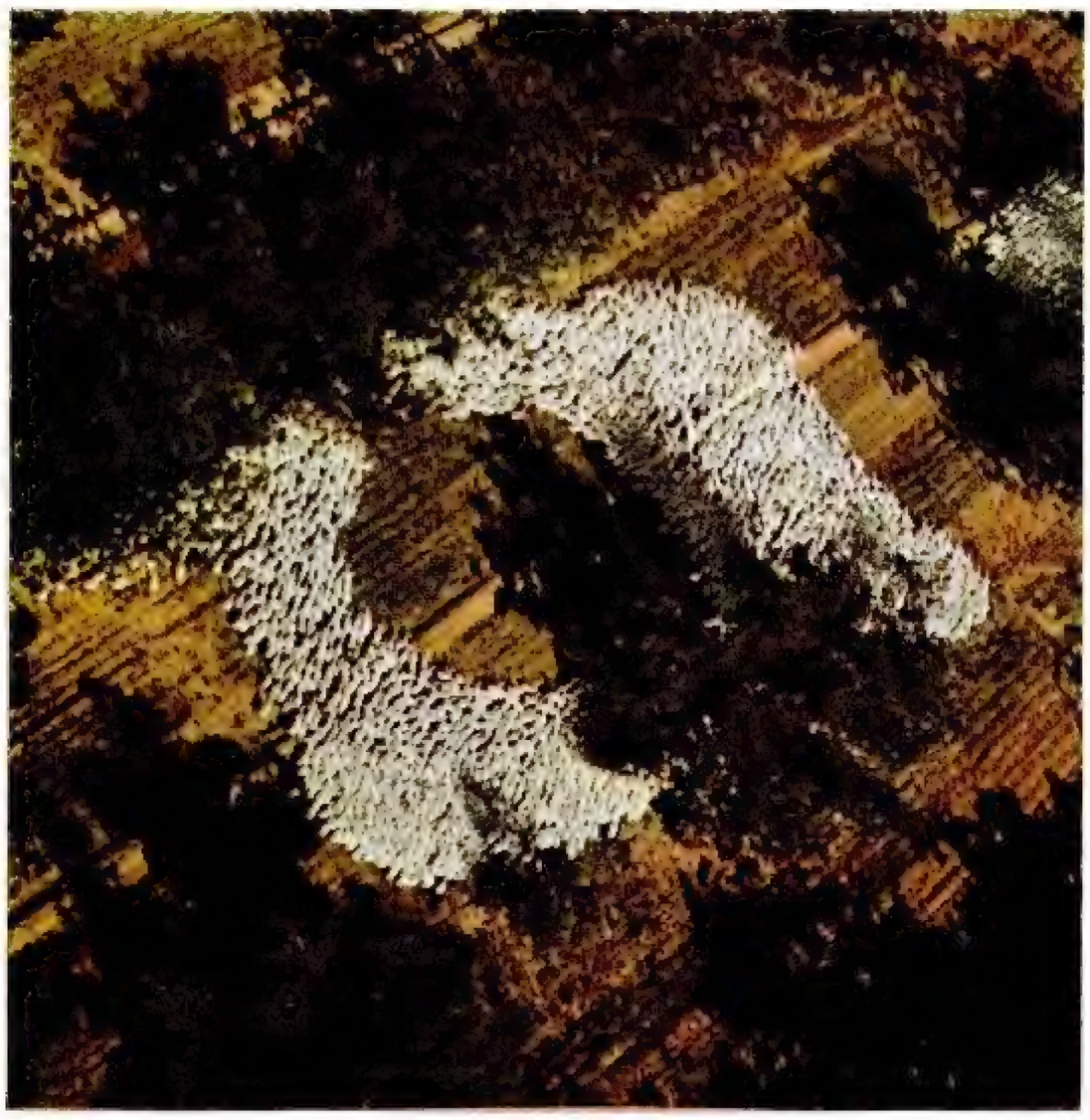
IRRIGATED CROP LAND blooms on a once barren waste. In the Kittitas Valley of Washington, where rainfall averages about eight inches a year, water from the Yakima River makes farming possible. Here wheat ripens unevenly and is often tumbled into long windrows to dry. On the left two irrigation ditches show as slivers of blue. In the same valley another ditch stands as a boundary between death and life, separating sagebrush wastes

from patchwork fields whose colors reveal a crop rotation plan which defeats
nature's hostility. At first wheat and alfalfa, mottled gold and green,
are planted together and after shielding the alfalfa's early growth
the wheat is harvested. For four or five more years alfalfa is cut.

Then *it is* plowed under, enriching the soil so that it will support two years
of potatoes and a year of wheat, before the whole cycle begins again.

WHEAT PLAINS stretch across the windswept Montana land. This is dry country, where 14 inches of rain fall in a good year. Farmers must let the earth lie fallow every other year, husbanding the scant ground moisture. Here, near Broadview, the plain lies in great stripes 10 rods wide and up to a mile long, golden where the land is in winter wheat, dark brown where the earth is bare, plowed at right angles to the desiccating

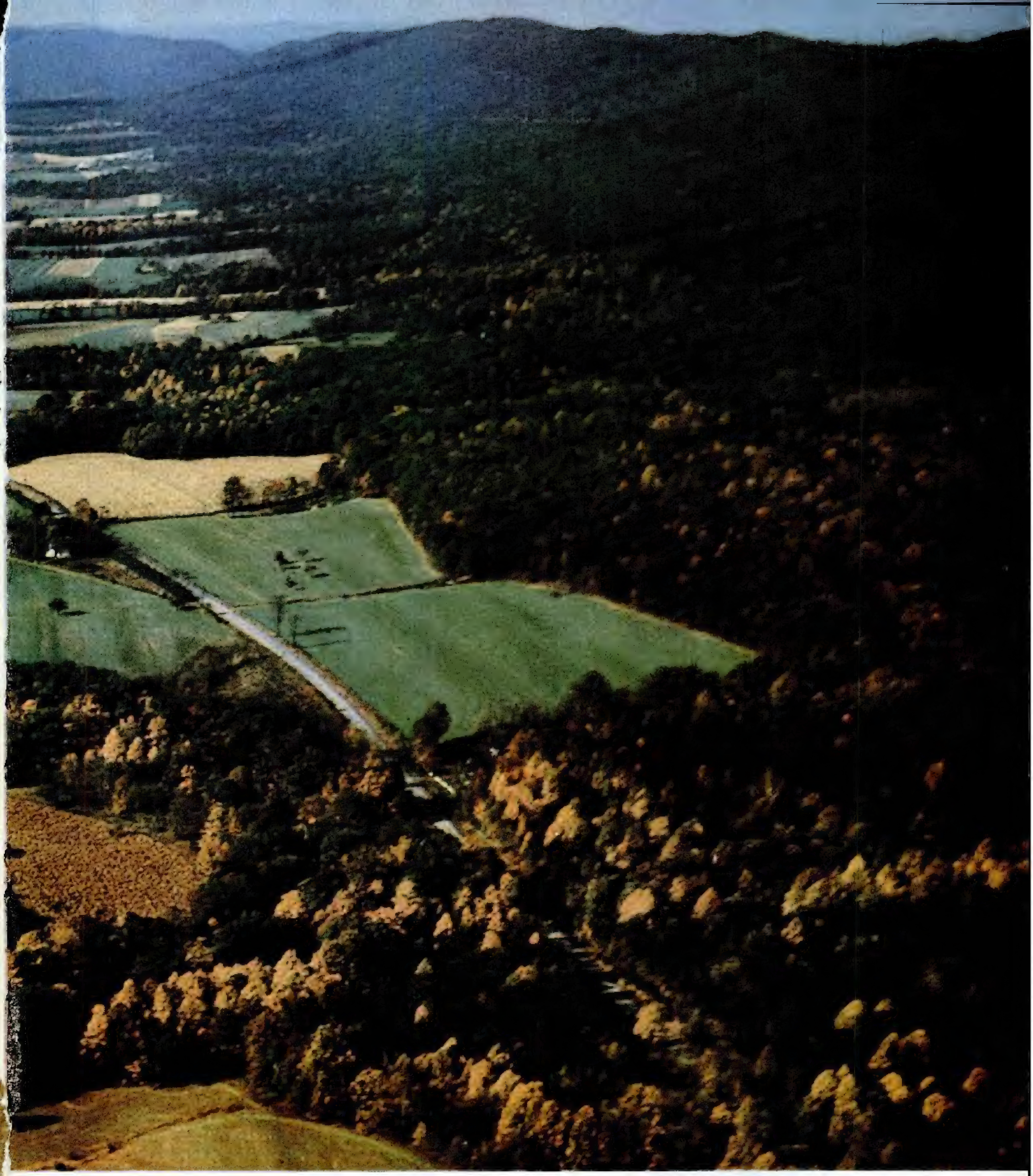
westerlies to keep the soil from blowing. The first homesteaders found that in a semiarid region a 160-acre quarter section would not sustain a family. Drought and unrelieved planting brought failure until by the mid-'30s larger farm units, and the strip-planting technique, had evolved. Now Montana is the fifth biggest wheat-producing state in a country where wheat acreage is second only to corn. Last year's harvest in Montana reached 75 million bushels.



LIVESTOCK LANDS from southern savannas

to midland meadows support the greatly increased output of meat and milk
which marks the new trend in American high-protein food production. In the verdant
Wisconsin countryside (*right*) Holsteins amble down a lane to pasture.
Here, on Frederick Schroeder's farm, the one cash crop is milk;
all that grows is feed—pasture for grazing, corn and hay for winter fodder.
Other forms of land use are often complex and sometimes curious;
geese by the thousands drift like snow through a New Mexico pecan grove
and fatten on the weeds that grow amongst the cotton
planted between the trees. Thus Deane Stahmann's 4,000 acres
support three crops—poultry, pecans and cotton. On Florida pastureland
near Lake Wales (*below*) beef cattle feed on the country's wastage, rejected oranges
and grapefruit trucked away by packers and dumped on the ground in great swirls.

FERTILE FARMLAND wrested from the forests fill Powells Valley, a slender belt of rich land set between Appalachian ridges in south central Pennsylvania near Harrisburg. A brown crescent of field corn stands ready to be cut. Beyond, oats lie golden and winter wheat light green in the harvesttime afternoon. Diversified farming has been the rule of the land since the first settlers came from Germany more than two centuries ago.



The valley contains about 150 separate farms, few larger than 100 acres.
Most have neat red barns and white houses, a few cows, a small flock of chickens,
sometimes a penful of hogs. There are rich pastures and large stands of grain crops,
and in spite of its patchwork nature the region's output is impressive.
Last year it produced more than a million bushels of corn,
a half million of oats and a little of everything else from potatoes to tobacco.

RICE FIELDS scalloped by great looping levees which control the flow of water, slope smoothly away from a road in eastern Arkansas where one fourth of America's rice grows. Rice is a secondary item in American diet but a symbol of an abundant agricultural economy.

So thoroughly mechanized is rice production that only two men are needed to tend the fields above. The 1954 U.S. rice harvest was nearly 6 billion pounds.

So good to come home to—a hot tempting bowl of soup, nearly filled to the brim with sound beef stock and 15 bright and gay vegetables.

Simply wonderful—wonderfully simple . . . any time—

Campbell's Vegetable Soup

A tempting idea—right now!

TWENTY-MINUTE PARTY MEAL can be prepared by mother and daughters for eight guests because kitchen drudgery was done before food was packaged. Meal includes dehydrated onion soup, on stove, frozen trout in casserole on table, frozen potato puffs in skillet behind semi-baked bread, canned string beans and mushrooms on stove, extreme right, jars of brandied fruit in chafing dish. Same meal started from scratch would take same team of three eight hours to prepare.

WAYS TO CUT DOWN KITCHEN WORK

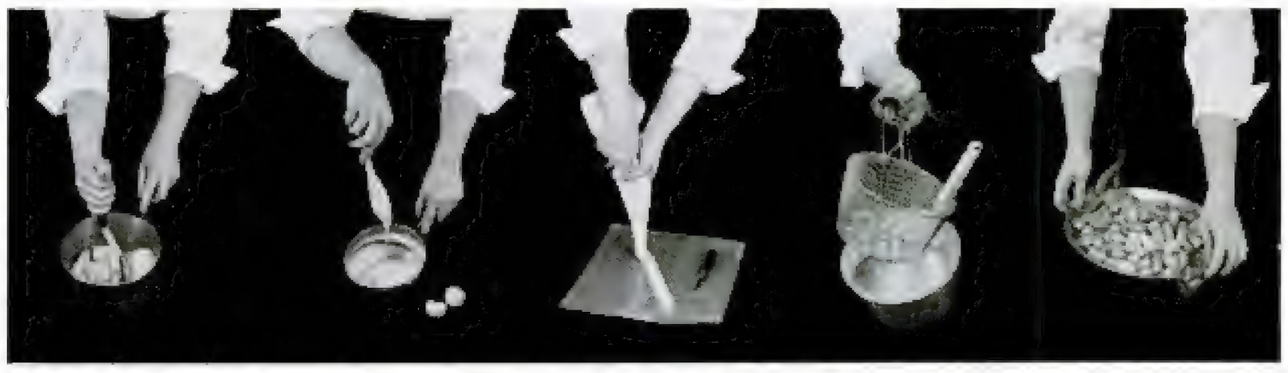
LIFE presents experts' ideas for timesavers

TROUT bought frozen have already been gutted (*left*), rinsed and dried (*center*). Only thing the housewife has to do (*right*) is add butter and seasoning, bake 10 minutes.

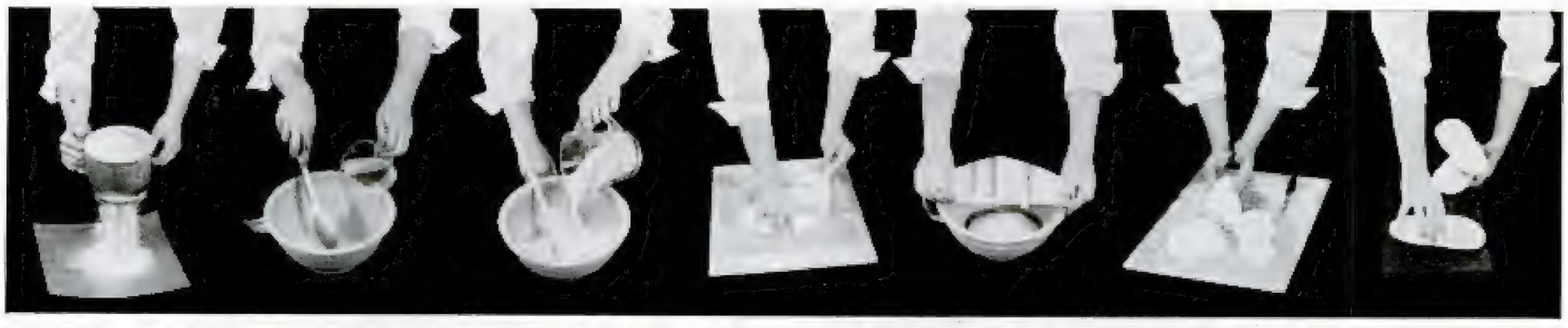
In this almost servantless day, more servants are available to help with the work in U.S. kitchens than ever before. These servants make it possible to prepare pleasant meals quickly. Best of all, they charge little for their services, are reliable and never talk back. They are the servants who come built into the frozen, canned, dehydrated and precooked foods which lend busy women a thousand extra hands in preparing daily meals. Without them, the hostess on the opposite page who prepared her dinner in 20 minutes would have spent weary hours of work. The hands shown here are going through the paring, chopping and cooking that was done before the food was bought.

There are many other ways to save a housewife's time, important among them the better organization of space and the better choice of tools. LIFE asked six experts to help solve some common kitchen problems. On the following two pages are the results of a study showing the great increase in efficiency that can come of sensible planning and small-scale changing. Manufacturers are constantly improving the basic implements used in routine kitchen jobs, and every year from the experimental kitchens in universities and food companies there come new tricks (*p. 20*) to help women make shorter shrift of their cooking.

VEGETABLE DISH of green beans and mushrooms comes in cans. Beans have already been (*from left*) cleaned, trimmed and cut, cooked. Cleaned, sliced mushrooms have been sautéed. Housewife (*right*) mixes two vegetables in the casserole, heats them for 5 minutes.



POTATO PUFFS, bought frozen, have been worked on for 1½ hours. From left, potatoes, after having been peeled and steamed, were mashed; *pâte à choux* has been made; this and potatoes have been mixed, shaped and fried. Housewife (*right*) cooks puffs for 15 minutes.



FRENCH BREAD, bought ready to brown, has gone through these steps; from left: sifting and measuring flour; dissolving yeast in water; measuring and mixing ingredients; kneading the dough; letting dough rise twice; dividing dough and molding into loaves, then letting rise for another hour and baking for 50 minutes. Housewife (*right*) just puts bread in oven for 15 minutes.

BRANDIED FRUIT, bought in jars with fruit well aged in the liquor, has been prepared thus; from left: apricots blanched; apricots and pears peeled; pears split and cored; cherries washed and pitted; the sweet syrup made and cooled and brandied; syrup and fruit packed into jars; jars put in a hot water bath. The housewife (*right*) takes only 1 minute to put the fruit in a chafing dish, a few seconds to add more brandy if wished.

ONION SOUP comes in dehydrated form. The 6 hours of work done includes, from left: cubing the beef for stock; browning the beef and simmering with water for 2 hours; vegetables for stock, cleaned and cut, added to beef; cooking and stirring mixture for 1 hour; straining the stock; peeling onions; slicing onions; sautéing onions; adding them to stock and cooking for 2 hours. It takes the housewives (*right*) 5 minutes to get dehydrated soup ready for pot and 15 minutes to heat it.

CONTINUED ON NEXT PAGE

SIMPLE CHANGES, FEWER STEPS

Too much time in the kitchen is used up hunting for things and scampering from sink to counters to cabinets. A few changes, largely in storage methods, can vastly increase efficiency. To show how to reorganize the space without too great expense, LIFE chose an actual kitchen and recreated it in exact detail (*top, right*). Then experts were called in: Dr. Jean Warren of Cornell, Mary Rokahr of the University of Connecticut and Dr. Marvin Mundel of Marquette. Their two improved versions are at right below. The original kitchen, shown with cabinets stripped of casings, suffers from the half-baked planning characteristic of most U.S. kitchens. Storage areas are disorganized. Pots are stacked on top of one another. Canned goods are in confused piles. There is no storage near the two main working areas, the sink and range.

BASIC IMPROVEMENTS, COSTING $250, are numbered in picture at right. The main changes are additional shelving to create four well-defined work areas so that items of equipment for each task will be handy. No change in room structure or shift in appliances has been made. Starting at left: 1—Extra shelves in the broom closet help store cleaning materials; shoebag holds vacuum cleaner parts, dust cloths and brushes. 2—New shelf for cans provides tidy storage. 3—In organized mixing area, new slot holds cake, pie and muffin tins. 4—Storage drawer with dividers keeps baking utensils in order; mixing spoons, measuring equipment and cookie cutters are separated. 5 and 6—Two new shelves in place of the one old shelf provide twice as much storage space. 7—Lip of cupboard removed to facilitate getting utensils in and out. 8—New shelves hold most used condiments and cereals. 9—Storage cabinet next to range has chopping-block top, with asbestos sheet near range; two drawers hold stirring utensils (next to range) and sink utensils; slots on left side of cabinet hold trays, baking pans. 10—New shelf holds cups, small dishes. 11—Knives are nearer sink where most paring is done. 12—Small shelf above sink holds cleanser, soap, glass. 13—Partition in cabinet under sink makes place to stand dish drainer. 14—New drawer holds chest of silver. 15—Shallow shelf holds scouring materials.

ELABORATE REORGANIZATION, COSTING $800 (total), includes all the changes shown in $250 reorganization (*center*). It involves several structural changes in the room, moving of all major appliances except refrigerator and replacement of one appliance. Picking up from the changes in the $250 job: 16 and 17—New, smaller windows make it easier to arrange equipment efficiently. 18—Copper pots are moved nearer range. 19—Washing machine moved from sink, placed next to dryer makes unified laundry area. 20—Range moved toward sink. 21—Cabinet next to range holds cooking utensils. 22—Cabinet holds sink utensils and tableware; tops of two new cabinets provide a continuous working surface linking range to sink; chopping block is now next to sink. 23—New sink omits unnecessary laundry tub and provides solid work surface joined to shelves at left. 24—Shelves have been continued to make a bar center at the top, and a salad center at the bottom. By reorganizing the kitchen under the plan shown in the middle picture, working time could be cut about 25%. With this more elaborate reorganizing, another 25% could be saved.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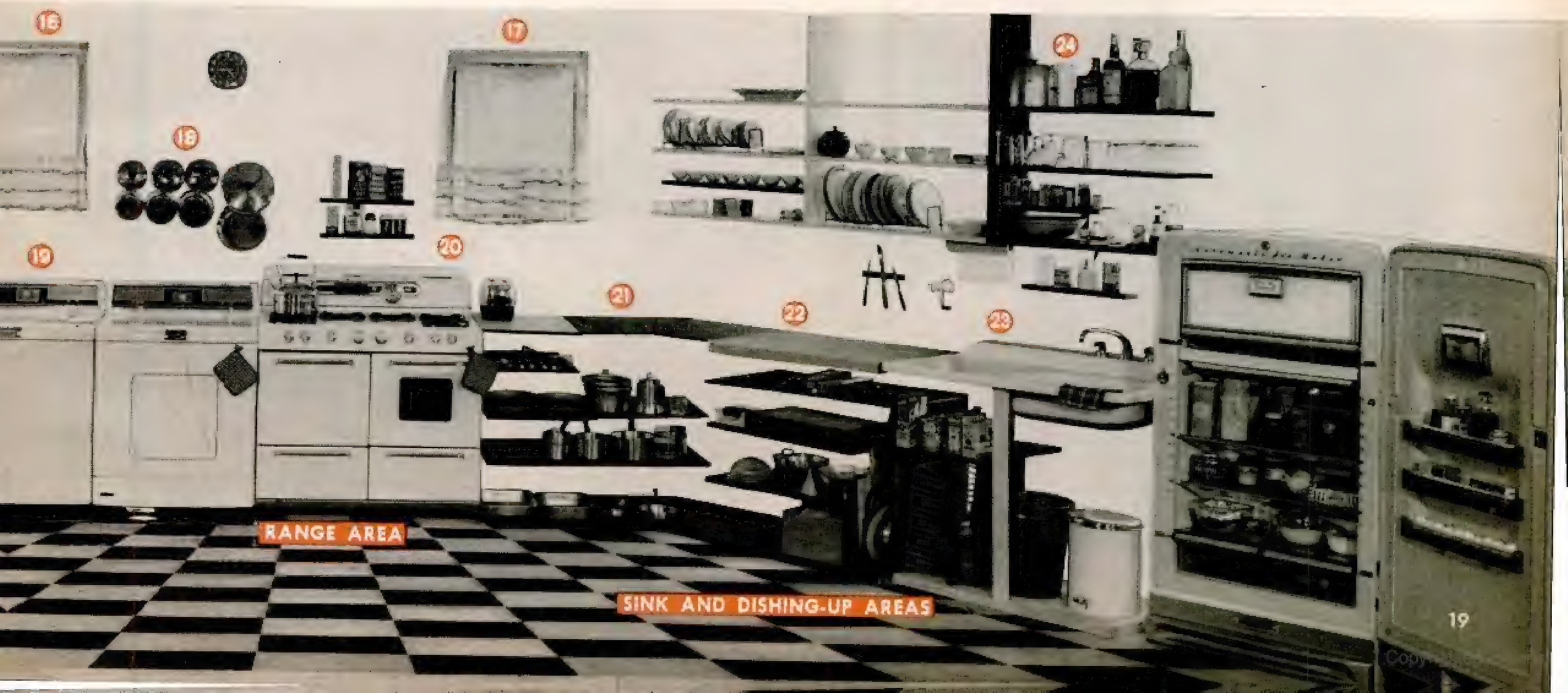
RANGE AREA
SINK AND DISHING-UP AREAS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RANGE AREA
SINK AND DISHING-UP AREAS

COOKING TRICKS AND TOOLS

WHAT TO LOOK FOR in buying small kitchen tools is prescribed by Home Economist Louise Peet. She points out housewives too often skimp on basic implements even though, since they are in most frequent use, they should be of good quality. Her specifications for assortment of tools shown above, from left: glass measuring cups should have lip for pouring; sifter must be operable with one hand so other hand can stir; egg beater should have gear wheel; measuring cups for solids must be of aluminum; broad spatula works best; rubber scraper must be strong and flexible; measuring spoons should be joined together; four knives are needed (paring, utility, carver, slicer), must have hollow ground blades; shears for chopping raisins, chives, parsley must fit hand comfortably. The other pictures on this page show some of the handy timesaving tricks suggested by Experts Dorothy Covert and Mary Kirkpatrick.

HURRY-UP SEASONING can be ready in advance. In jar mix salt, pepper, paprika, onion and celery salt, powdered garlic. Sprinkle on food when needed.

PINFEATHERS of fowl can be safely and quickly removed by singeing with well-filled cigaret lighter. This method leaves no black smudge on the meat.

FLAVORED BREAD CRUMBS to use on veal, chops, fish or chicken can be made in quantities and stored for weeks. Flavor with garlic, cheese, parsley.

QUICK THICKENER for sauces and gravies can be prepared in bulk. Blend one cup butter with cup flour. Chill in a butter carton. Can be cut into cubes.

CHOPPING CHORES can be done for whole week at a time. Store chopped onions, celery, peppers, parsley, nuts, in individual, labeled jars in refrigerator.

DE BEERS CONSOLIDATED MINES, LTD.

¼ carat $88 to $200 ½ carat $225 to $475
1 carat $600 to $1227 2 carats (shown) $1350 to $3182
Average prices for top-grade engagement diamonds (unmounted) offered by representative jewelers in October, 1954. Add tax.

There is a brief, enchanted time for lovers when all their world is bright with dreams. Happily, they may recall it always, in the lights of her engagement diamond.

A DIAMOND IS FOREVER

HEADED FOR NEW YORK, food trucks carrying supplies line up at the New Jersey end of the Lincoln Tunnel as traffic flows around them.

BIGGEST APPETITE

New York area brings in all it eats—which is one-twelfth of food consumed in U.S.

Photographed for LIFE by ELIOT ELISOFON

Freight cars (*off to right*) and ships (*background*) bring in more food.
In foreground a truck carries bread baked in the city to New Jersey.

Hour after hour, day after day the dull droning of heavy trucks, the screeching of freight car wheels and the clanking of ship unloading gear bespeak the endless and huge task of feeding New York. With its 15 million inhabitants the New York market, comprising not only the city but Westchester and Nassau Counties and northeastern New Jersey, is the biggest food consumer in the world. In a year New Yorkers manage to cram down their throats 600 million bananas, 200 million pounds of fish, 2 billion eggs and 5 million pounds of garlic. They eat more spaghetti than Rome, drink more milk than Norway, Denmark and Belgium combined.

Not only do New Yorkers eat up 1/12th of all U.S. food, bringing in all of it from outside in a gargantuan transportation effort culminating mostly at the Hudson River (*above*), but they manage in turn to process and package so much more for retail elsewhere that the city is the nation's leading supplier of such items as candy, foreign wines and spirits, bakery goods, jam and coffee. On its way to its final slicing or stewing or swallowing, the city-dweller's fare travels through a distribution system which, despite its inefficiencies, performs a phenomenal task in serving the world's biggest appetite.

←**NOISY CONGESTION** characterizes Washington Market at 1:30 a.m. on a Thursday morning. In foreground hand trucks carry perishable produce from wholesalers (*background*) to jobbers and retailers, whose trucks jam curbstones.

SYMMETRICAL DISPLAY of California oranges is made on Erie Railroad's pier for examination by buyers who will bid for choice lots. Receivers employ skilled display men but buyers often inspect back boxes anyway for comparison.

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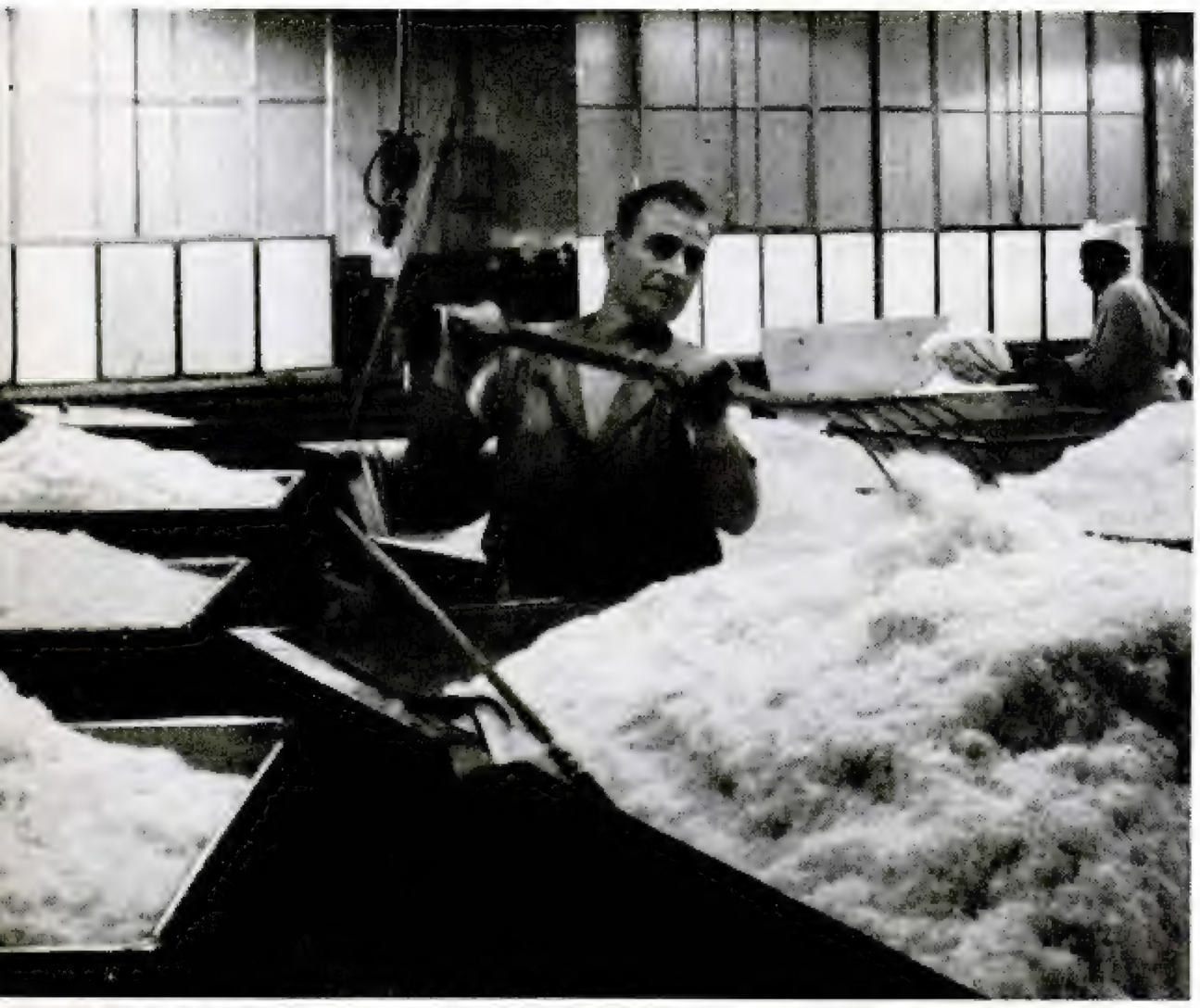


SHREDDED COCONUT is stirred in General Foods' Franklin Baker Division plant which imports 40 million pounds a year. Dried coconut from Philippines is sweetened and moistened before shipment to confectioners and retailers.

FRENZIED BUYERS in pier buildings near Washington Market wave their catalogs to attract auctioneer's attention and enter a bid on some oranges. Buyers invariably hold back as bidding starts, then join in heatedly when they think

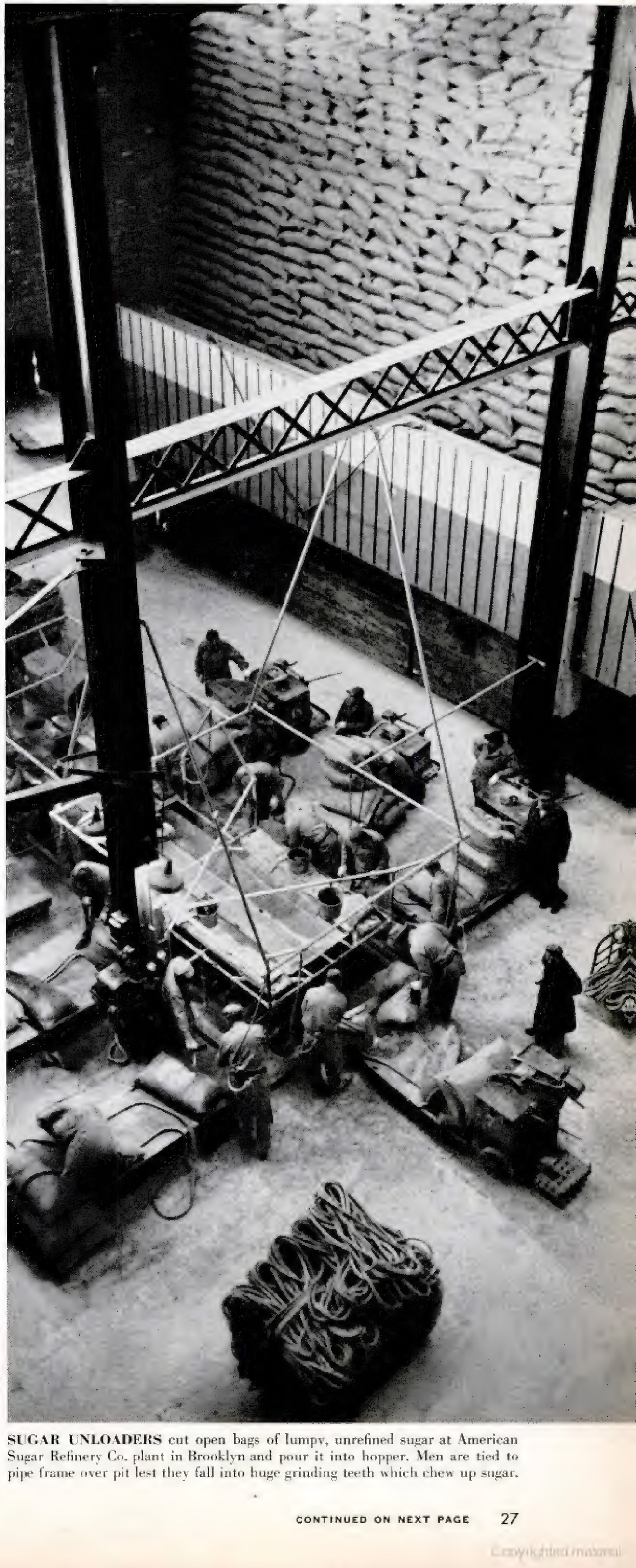
FRANTIC BIDDING, FASTER HANDLING

New York has for years fumed about its complicated and inefficient food distribution system—one so ponderous that the cost of getting a single orange across the city from the West Side piers to an East Side consumer is greater than the total cost of raising the orange in California and shipping it by rail all the way across the U.S. to New York. For perishable foodstuffs the crux of the trouble lies in the archaic buildings and old-fashioned methods of the Washington Market and its nearby docks (*previous page*). Here food is painstakingly unloaded for display, inspected by wholesalers, sold in outdated auction rooms (*above*), trucked across to the market itself and then finally reloaded onto other trucks which edge their way out of the crowded, narrow streets to retail stores elsewhere in the city. Study after study has recommended that New York build a more efficient market, but habit, strong trade unions, landlords and apathy have combined to maintain the time-consuming and expensive ways.

Less perishable foods are distributed more efficiently. Bananas, coffee and sugar—all major U.S. import items which come through New York's port—can be handled at least partly by machine (*right*). Canned and packaged foods are moved about by big fork-lift trucks and stored in monster warehouses before going to retailers. But complicated human operations remain, as with the eight million fresh eggs consumed every day in the New York area, an overwhelming proportion of which must be held up to the light individually for candling.

BANANAS ON THE MOVE go by conveyor belt → from ships through United Fruit Terminal to freight cars and trucks which take them to ripening rooms.

price is right. Railroad's auction rooms were originally designed for more leisurely bidding. But buyers today stay in back of the room, yelling their bids, jostling each other, and staying near door for fast getaway to another auction room.



SUGAR UNLOADERS cut open bags of lumpy, unrefined sugar at American Sugar Refinery Co. plant in Brooklyn and pour it into hopper. Men are tied to pipe frame over pit lest they fall into huge grinding teeth which chew up sugar.

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BOLOGNA LINKER Madeline Deutsch ties coil of knockwurst in Stahl-Meyer plant, which sends frankfurters, sausages, hams and bacon all over U.S.

SPAGHETTI SWAYS AS IT GOES FROM DRYING TO CUTTING AND PACKAGING STAGES IN PLANT OF

SMOKE OVEN INSPECTOR goes through racks of salmon in Richard Schnibbe division of Vita Food Products plant in Brooklyn as fish hang over hickory fires. Vita Foods imports whitefish from Lake Winnipeg in Canada, 1,325 miles from New York, and also processes eels, sturgeon, sablefish.

SPICED, SMOKED AND SWEETENED

Much of the food which New York so laboriously imports is not consumed in the city but is dressed, cooked, frozen or smoked and shipped out again. All this enterprise taken together makes the city the biggest food processor in the U.S. The heady aroma of coffee roasting, the seductive smell of chocolate cooking and the pungent odor of fish being smoked are commonplace in New York as the city produces food both in huge sausage and spaghetti plants (*above*) and in tiny storefront confectioneries and basement bakeries.

Processors are blessed with a skilled labor market which is, however, so specialized in some industries that a head smoker of fish can earn up to $200 a week and a worker in a meat-curing plant does nothing all day but probe for arteries so that a ham may be injected with curing pickle. Rivalry between processors is keen and trade secrets are jealously kept. The big biscuit bakers, for instance, guard their cracker making as fiercely as General Motors guards the plans for its next year's models.

V. LA ROSA AND SONS, WORLD'S LARGEST MAKER OF MACARONI PRODUCTS

PASTRAMI SUPERVISOR Rabbi Abraham Samuels (*right*) examines beef to verify that it is kosher at Zion Kosher Meat Products plant. Kosher foods like spicy hot dogs, made in New York, are increasingly popular throughout country.

ICE CREAM PACKERS fill containers in Borden plant. Vanilla is most popular (being packed here), chocolate next, but plant produces 28 flavors in all. City produces enough ice cream in one day to fill a 75x25-foot swimming pool.

CANDY LOADERS at a Fanny Farmer factory in northern Bronx take chocolates from boxes on central rack and place them in specific niches in boxes on conveyor belt before them. Girl in left foreground puts covers on filled boxes.

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LAST LAP of New York food's long odyssey from farm, orchard or ocean depths to final consumer is ended as workers in a supermarket on East 20th Street push potatoes, lettuce, milk and turkeys across the sidewalk into the store. They must hurry to prevent the fresh vegetables from spoiling in the cold outside.

Mrs. Donald Cummings, Jr., and her young son Donald

"I WASN'T ALONE ANY MORE"

Most of us know what it is like to have a telephone. But have you ever thought what it would be like if it wasn't there, even for a little while?

Here are some good words along that line from Mrs. Donald Cummings, Jr.

"When we moved into our new house," she told us a few weeks ago, "I felt a little strange—with a young baby and all—and I couldn't seem to get a feeling of being settled and at home.

"Then the telephone was put in. And suddenly everything seemed different. I could call people! I felt better about being by myself in the house with the baby. I felt better about my mother who had been ill in Boston. And about my husband in uniform far away.

"And then I realized that it wasn't just the telephone calls I could make—it was that people could call me if necessary. I wasn't alone any more."

BELL TELEPHONE SYSTEM

Reminding you that someone, somewhere, would like to hear your voice today.

FISHWAYS, cement-covered channels in which salmon ascend series of pools, were built at Hell's Gate canyon to help sockeye through. The tunnel at the left leads to one fishway, another is at the right.

COMEBACK OF THE SOCKEYE

Restored river adds to supply of country's traditionally favorite fish

Photographed for LIFE by OTTO HAGEL

This fall, as they made their annual fight up the Fraser River in British Columbia, the sockeye salmon were enacting one of nature's ancient dramas with the help of one of man's great fishery restorations. Strung out over 120 miles, the sockeye were on a rigorous 500-mile river journey to the gravel bars where their parents four years earlier had spawned. Millions of them would get there but millions more would be netted en route to become part of the 1.1 billion pounds of fish the U.S. stokes down each year. Over the years, salmon has been the favorite American fish.

In 1913 a huge cliff, which was blasted for a railroad, tumbled into a Fraser River gorge, making it impossible for most of the sockeye to get through to spawn. A series of fishways (*above*), built by the International Pacific Salmon Fisheries Commission, now help the fish upstream and this year the $2 million investment paid off in the biggest catch in 41 years —worth, on the retail market, $41 million.

←**FIGHTING UPSTREAM,** salmon leap rapids on way to spawn. Female is in lead, hook-jawed male behind.

SOCKEYE SPAWN (*upper right*) amid corpses of sockeye which, having already spawned, then died.

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GILL-NETTER picks over 370 sockeye, worth $740 to him, which he caught one night in Puget Sound.

PATIENT WORK FOR RICH HARVEST

Most of the sockeye salmon are caught in Puget Sound as the fish head for spawning grounds in the quiet inland streams. Some fishermen still use the ancient Indian technique of "reef-netting," a simple system by which two stationary boats, with a net between them, wait for the fish to come by. It may require weeks of patient spotting (*right*) but is cheap, a complete outfit coming for $1,500. Just as old but lonelier is the method of the gill-netter, who lays a screenlike net across a channel the fish are likely to use and then, in his boat, drifts with the net.

But most sockeye are caught by the more modern purse-seiners whose 75-foot boats are manned by six- to 10-man crews. Artfully playing purselike nets across the tides before closing them around schools of fish, these seiners haul in thousands of sockeye in a single catch.

PURSE-SEINERS dip their catch out of purse after backbreaking work of hauling up 1,800 feet of net.

REEF-NETTERS Jerry Anderson, 21, and brother Ross, 15, keep watch for sockeye in Puget Sound. After weeks of waiting they caught 1,200, worth $2,400, in one hour, will use money for schooling.

STACKED LIKE CORDWOOD, these frozen sockeye salmon from this year's catch are racked in a cold storage plant at Steveston, B.C. They will be sold at fresh fish counters. Most sockeye are canned and the 1954 haul was so big that children were excused from school to work in overburdened canneries.

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SCIENCE ENSURES BIG RUNS

ARTIFICIAL SPAWNING to assure big future runs is carried on by Sockeye Commission. Here eggs are taken from females. Male milt then is sprayed on.

PLANTING OF EGGS is done in riverbed. After hatching, small sockeye swim in fresh water for a year before proceeding to ocean feeding grounds.

TAGGING OF FISH supplies information, when the fish are recovered, on ratio of males to females, age, weight and the total number of fish in the run.

L&M's Got *Everything!*

Actress Diana Lynn: This is the best filter of all—L&M's Miracle Tip. The smoke is mild, yet full of flavor.

Mr. and Mrs. Stu Erwin, stars of TV's great "Stu Erwin Show": As we say on TV, this certainly *is* the Miracle Tip. L&M's filter beats 'em all.

Mrs. Laddie Sanford, Socialite: I smoke L&Ms . . . so do most of my friends. Wonderful filter...fine taste!

KING SIZE & REGULAR

L&M IS BEST_ *Stands Out* FROM ALL THE REST

STANDS OUT FOR FLAVOR. The pure, white Miracle Tip draws easy, lets you enjoy all the taste.

STANDS OUT FOR EFFECTIVE FILTRATION. No filter compares with L&M's pure, white Miracle Tip for quality or effectiveness.

STANDS OUT FOR HIGHEST QUALITY TOBACCOS, low nicotine tobaccos, L&M tobaccos . . . Light and Mild.

MUCH MORE FLAVOR

MUCH LESS NICOTINE

America's *Best* Filter Cigarette!

SHOPPER'S DELIGHT

In crowded scenes of buyers, babies, bargains supermarkets sell half the country's groceries

The great American supermarket is still less than a quarter-century old but already it has caused a profound change in the way America sells its food. Supermarkets constitute only about 5% of this country's approximately 360,000 grocery stores, but they will this year account for nearly 50% of the total business.

Shopping in supermarkets has become a major weekly ritual of American family life. The tumultuous scene above, filled with commerce, confusion and lurking peril, could have been sketched at any one of the 18,000 full-fledged supermarkets in the U.S. or at one of the 70,000

lesser emporia the trade calls superettes. It clearly reveals the change which has taken place since the days when the housewife went alone to a neighborhood store and bought enough to last her through the day.

Here, as she buys food by the cartful, the market around the shopper swarms with preschool dynamos who crouch among flour sacks, yip at elders in search of wheat germ, upset symmetrical towers of canned beans or seek to gash themselves on bargain knives. The ladies still do most of the buying, pausing between soups and nuts to gossip amiably and enjoy one of the real pleasures of the supermarket outing. More and more men are doing the family shopping, like the bemused patriot in the hunting cap trying to decide if his wife's list says herring fillets or henna rinse—a supermarket worth its salt may carry both.

The supermarket has tried many new retailing tricks to take advantage of the fact that much buying is done on impulse. Related items like pancake mix and syrup are displayed together at eye level, while staples like bleach and floor wax are stored below. Meat counters are often placed at the rear, leading shoppers past the greatest possible number of shelves. One way and another, the supers grossed about $17 billion in 1954.

VEGETABLE VARIETIES get last check for quality and uniformity at Seabrook plant before being dropped through the floor for assembly line packaging and freezing. These vegetables, most of which were in the field two hours before this picture was taken, are less than 1% of a day's run but will fill 12,300 packages.

FIVE SEABROOK FARMS FIELD WORKERS FORM A RELAY TEAM TO SPEED UP HARVESTING OF BOSTON MARROW SQUASH, ONE OPERATION WHERE MANUAL LABOR IS STILL BEST

BIGGEST VEGETABLE FACTORY ON EARTH

Seabrook Farms uses industrial planning to grow 100 million pounds of food a year

On 50,000 fertile acres in southern New Jersey and two adjoining states lies the biggest, best-organized vegetable factory in the world. Here, with the mass production adeptness usually associated with motor cars, Seabrook Farms last year grew, gathered and froze 100 million pounds of 29 vegetables and fruits. Its packaged output of lima beans would have stretched 2,250 miles. Its production of asparagus equalled one serving for every resident of New York, Florida, Washington and Texas. In size and degree of integration Seabrook stands unique, even in a time when U.S. farms generally are growing larger, fewer and more mechanized.

Seabrook's size matches its know-how. Each acre is now planted on a split-second "growth unit" schedule so that the crops reaching maturity each day in harvesttime will just equal the capacity of the processing lines. The flow of harvesting is mapped like battlefield strategy from central HQ. Radio-equipped field trucks (*right*) make sure that an empty is ready to move into position the instant a truck is filled and starts for the processing plant. There, thanks to careful scheduling, the truck will dump its load with no dead waiting time. Often less than an hour elapses from the time a bean is picked until it has been washed, sorted, hand-checked, packaged and quick-frozen. Such high-powered activity last year employed 3,200 full- and part-time workers, and grossed a fat $25 million.

MACHINE HARVEST of lima beans is done by tractor-pulled loaders which dump cut plants into rolling trucks. Radio-telephone is used to call additional trucks.

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SEABROOK

CONTINUED

THE HANDS in Seabrook Farms' complex operation are a varied group. In the foreground are some of the 996 actual field workers. On raised bed of a lift truck stand Chairman C. F. Seabrook (*left*) and his three sons. Behind are white-shirted office workers. Standing before unloading docks and atop the roofs of dock, processing plant and freezer building (*rear*) is the morning shift of the farm's 1,924 plant workers. Engineering crew stands atop building at right rear.

Seabrook's vast array of field equipment includes carrot-picker (*left, front*), lima-bean pickers (*foreground*) and spinach reapers (*center*). Farm has its own fire truck (*right*) and ambulance (*far right, center*). Fleet of 409 trucks includes trailers and dump trucks, like those waiting at unloading dock to dispose of (*left to right*) broccoli, carrots, cauliflower, squash, spinach. Overhead pipes at right and in the latticework at left carry steam to processing plant.

BUSINESSMEN-FARMERS Dick and Fred Bruene draw up crop rotation map for 1955 at the desk where they regularly keep their complex books.

THE FARMER AND

The history of an Iowa family's full life shows

By PROFESSOR HERRELL DeGRAFF, Cornell University Economist,

FRED BRUENE, the head of the family shown on these and the succeeding pages, has been a problem to his government nearly all his adult life. Economists have fretted about him and politicians have bled for him. Enough laws have been passed, in an effort to save him, to fill a telephone book.

To those who have known him over the years, this might seem a rather ludicrous state of affairs. Bruene at 66 is wiry, keen-eyed and still possessed of excellent health and physical endurance. His education (not only an A.B. but also an M.A.) is far above average. He is a steady worker, abstemious, punctual and reliable. At the depth of the Depression he sent five children through college. His neighbors in Iowa have held him in such esteem as to make him, at various times, chairman of numerous local organizations and a member of the state legislature. A casual audit would indicate that he and his family are probably worth around $100,000.

Why, then, is Fred Bruene such a problem? The answer is that he is a farmer—and every politician knows that the business of living on the U.S. land, which includes some of the richest in the world, and ministering to the U.S. dinner table, which has few rivals for richest in the world, is a sick industry.

One can learn a great deal about U.S. agriculture—its romance and its heartaches, its ups and downs over the years and the strange government language of "farm policy" and "parity" that has come to surround it—by studying the career of Fred Bruene. Not that he is exactly a "typical" farmer; there is no such thing. U.S. agriculture is far more diverse than one might gather from the constant repetition of such generalizations as "the farm problem" or "the farmer's plight," which lump all farmers together in a single sorry group. The New Jersey truck farm, producing vegetables for the dinner table of New York and Philadelphia, has little in common with the Wyoming ranch producing calves to be fattened on still another type of farm in the Midwest corn country; and none of these places bears much resemblance to the cotton plantations or the giant corporate wheat farms producing mostly for government storage bins.

Bruene's farm is 240 acres of the deep, black loam almost in the very center of Iowa. He grows corn, oats and hay, feeds them to pigs, calves and cows, and each year sends to market somewhere between $25,000 and $45,000 worth of milk, hogs and cattle. This makes him pretty much of a bigtime operator, but U.S. farming has become pretty much of a bigtime operation. Of the five million farms counted by the census bureau, only the top two million really feed America. The others may support a family or two after a fashion, often on a part-time basis, and send a tiny trickle of produce to the market in return for a little ready cash, but they play an insignificant role in our agricultural economy.

If one could only stop thinking of Fred Bruene as a problem, the story of how he and his farm grew to their present eminence would be a highly romantic chapter in the building of America, for farms like Bruene's are even more important to our unprecedented standard of living than is generally believed. Everybody knows that our

FARM IN WINTER rests under the snow. From left are silo, cattle barn with granary behind it, hog house, machine shed, hog house, and farmhouse.

HIS GOVERNMENT

good and bad points of our policy on agriculture

in collaboration with ERNEST HAVEMANN and DORA JANE HAMBLIN

population has been migrating from farm to city, but many people think that it was the industrial revolution, creating its millions of new jobs, that made it possible for people to leave the farm. Actually it would be equally true to say the reverse: that it was the U.S. agricultural revolution which freed enough people from the soil to perform the factory work needed for all our bathtubs, automobiles and television sets. As the foreword to this issue of LIFE explains (*pp. 2, 3*), it takes only a tiny minority of our citizenry today to provide us with a richer and more varied diet than we ever enjoyed before.

The revolution and the rebels

THE Bruene farm, which dates back to 1882, encompasses most of the agricultural revolution, and the Bruenes themselves are prime examples of the rebels. Their story begins with Karl Bruene, Fred's father, who arrived from Germany with $2,000 given him by his father for a start in the New World. Like many German immigrants of that period, he went to the Midwest, where he used his money as the down payment on 120 acres and a two-room house near Gladbrook, Iowa. The size proves that Karl Bruene (or Charles, as he began calling himself in the U.S.) was ambitious. In those days a man with five horses to pull his plow and wagons could just about handle 40 acres of corn. An adequate one-family Iowa farm was 80 acres to allow for crop rotation, with half in corn and half in oats and clover each year. If the farmer had an energetic wife and children to help him, he could also keep some cows, pigs and chickens, and perhaps also grow a few potatoes, turnips, carrots and string beans for his own table. But that was about the limit of his production, no matter how strong he was.

Charles Bruene, though he kept no such detailed records as his descendents have developed, obviously prospered. He reared 10 children, adding room after room to the farmhouse as they were born, and gave them all a superior education. Fred, as the eldest son, delayed his own education to help with the others, then wound up at 25 with an M.A. from the University of Iowa. He worked with his father for two years and then, like many another farm boy before and since, borrowed the money for a farm of his own and married the village schoolteacher. This was in 1916. Five good years lay ahead for him and his bride Luella. World War I put the U.S. farmer back in the export business, which had helped sustain farms like Charles Bruene's in the late 1800s but had dropped off to nothing until the shooting started. Prices rose steadily to double the prewar level. A speculative fever swept the farming country. All over the nation farmers were frantically trying to buy more land to make profits. They bid the price up to outrageous levels and went into debt to pay it. When the collapse came in 1921 and farm prices dropped 40% practically overnight, thousands upon thousands of farmers found themselves hopelessly mortgaged. (This collapse accounts, as we shall see later, for some of the current mistakes of U.S. farm policy.)

Even for a prudent man like Fred Bruene, who kept his head while

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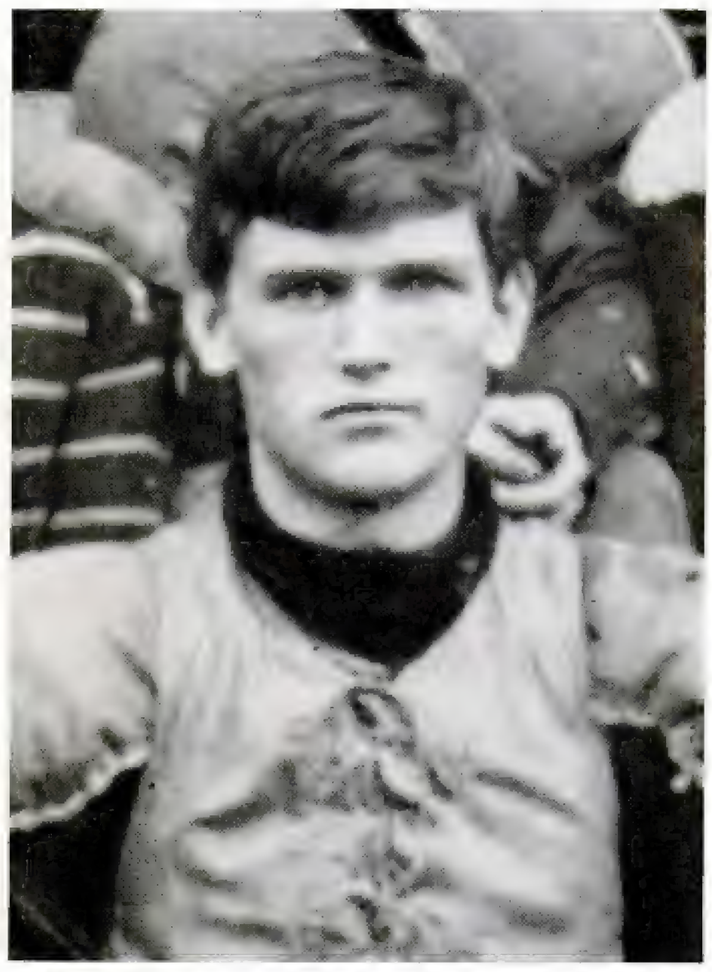
FOUR GENERATIONS OF THE BRUENE FAMILY

FOUNDERS OF THE FARM were grandfather Charles (*left*) and father Fred Bruene, shown here as



a football player at Iowa's old Charles City College. Grandfather Bruene bought the first land in 1882.

FRED AND FAMILY in 1925 were struggling through farm depression of the '20s. Children from

FARMER AND GOVERNMENT CONTINUED

others were gambling, the '20s were a difficult time. Although the worst of the panic was soon over, farm prices never did catch up to the prices of manufactured goods. His mortgage, even on land purchased before the big inflation, grew more and more onerous. There were five little Bruenes now, born within seven years, and it was a real task to keep them clothed. Bruene doggedly worked his 14-hour day in the fields. Mrs. Bruene took care of the children and the chickens, did much of the milking, all the cooking, sewed for her brood and tried to dress them respectably for Sunday school. Fortunately the Bruenes all had high spirits and could always laugh, even when things looked blackest. And a depression on the farm is not quite so bad as in the city. There was always something to eat. The two eldest children, boys, had ponies to ride.

It was in the '20s that Fred Bruene and the nation's other farmers became a matter of grave concern in Washington. There had been discontent down on the farm before, but it stemmed mostly from the high cost of transportation and the difficulty of getting capital for machinery or expansion. Mostly the discontent expressed itself in such forms as the Greenback and Populist movements for currency reform in the late 1800s. In the '20s the U.S. had plenty of currency but the farmer was practically broke anyway. The experts in and out of Congress took their first step toward creating a U.S. policy for the farmer in 1921, when they decided to raise tariffs and add numerous farm products to the protected list. Tariffs were hiked in 1921, 1922 and again in 1930. Exactly how this was supposed to help was probably not clear even to the proponents of the idea. The most depressed U.S. crops were wheat, tobacco and cotton—those which we had exported in the past. Our high tariffs simply made other countries raise their tariffs in retaliation and it became more difficult than ever for our wheat, tobacco and cotton farmers to sell anything abroad.

A $350 million mistake

IN 1929 Congress tried the first price support program. It gave $500 million to an agency called the Federal Farm Board, which spent most of it trying to "stabilize" the price of wheat and loaned the rest to farmers' cooperatives which were willing in return to store crops and keep them off the market. Prices kept declining despite all this and the Farm Board wound up 1) accomplishing nothing and 2) losing about $350 million. Its members, admitting defeat, came to the conclusion that it was impossible to support prices without controlling production.

At the Fred Bruene farm, as at others, the great Depression dug an abyss under what was already a pit. The situation was complicated by the death of a brother who had been living on and helping work his father's farm. Father Charles now owned 240 acres, was 65 years old and needed help. Fred tried to give it while still working his own farm, but this proved impossible. He finally gave up the struggle and moved in with his father on a rent-paying basis. He is still there, having bought the farm from the other heirs after his father died in 1939. He rented out his own farm in turn for a while, hoping thus to keep up the payments, but things got worse and he finally lost it.

To appreciate how badly the Bruenes were hit in the early years of the Depression, it must be remembered that theirs was a farm on which father Charles had lavished a half century of affection and hard work, plowing back practically all the earnings. The farm represented the savings of a strenuous and dedicated lifetime, plus a sizable mortgage on which interest had to be paid each year. Yet in 1930 the Bruenes—as shown by the meticulous year-to-year financial records which make their career so interesting to follow—spent $1,179 more cash than they took in. In 1931 they took in only $258 more than they spent. In 1932—and they were thankful for this—they took in $1,006 over expenses. Their total net cash income for the three years, received for the farm and for the hard work of two adult men plus Luella Bruene and the children, was $65.

In 1933 one of their cash receipts was $48.83 received for three brood sows sold to the government as part of the famous program of plowing under every third pig, conceived and executed by the New Deal's Agriculture Secretary Henry Wallace. In retrospect Fred Bruene gets considerable amusement from the size of the check and the government's anxiety to eliminate those sows before they could give birth to new problems. At the time, however, the check was practically manna. "That may not be much money for three sows," he reflects, "but it was the price in those days. And anyway I *sold* them —which was more than I'd been able to do before."

The New Deal had started to move in on agriculture. The following year, 1934, Bruene received $736.03 from the government, under what was then called the Triple-A program, for cutting his corn acreage from 89 to 79 and his crop of pigs from 179 to 92. These government checks amounted to a little more than a quarter of his net income that year. Every year thereafter until the U.S. got into World War II, Bruene got government checks ranging from $236.13 to $781.45 for curtailing his production in one way or another. (The first Triple-A was declared unconstitutional, like its industrial counterpart NRA, and the government had to get around the court decision by making payments for soil conservation, which was really just another although more useful form of crop control.)

Beginning in 1933, Bruene could also take advantage of a new type of government "stabilization" program, reminiscent of the old ill-fated Federal Farm Board of 1929, which was now conducted by a new agency called the Commodity Credit Corporation. Any time he had trouble selling his corn Bruene could seal it in a granary and receive a government loan on it, for an amount equaling the minimum price per bushel which CCC was trying to maintain at the time.

left are Merle, Jean, Doris, Warren and Dick. Dick, now 37, is his father's full-fledged partner in farm.

1952 FAMILY REUNION on the now spruced-up farm finds a prosperous Fred Bruene and his wife sitting proudly among their children, the five sons- and daughters-in-law and 15 grandchildren.

It should be noted here that CCC has tried to avoid the pitfall which had been pointed out by the old Federal Farm Board. It has actually tried to control production by making its loans available only to those farmers who agreed in advance to abide by its restrictions on the number of acres that could be planted. However, controlling production is a terribly difficult thing at best and is probably completely impossible when attempted by politicians who will be running for office again and hate to make enemies. By around Pearl Harbor Day, CCC had tied up $1.4 billion and as a result owned 7.2 million bales of cotton, 357 million bushels of corn and 519 million bushels of wheat. Had the war not bailed out CCC, the whole program might soon have got completely out of hand and collapsed under its own weight.

In the meantime Fred Bruene had managed in one way or another, partly with the government's help, to survive the depths of the Depression. He had even managed, and this out of his own strength of character, to send the children to college, starting with his eldest son in the dismal year of 1934. All during that period the Bruenes never dreamed of buying such a thing as an ice box, a carpet, an electrical appliance or even a new dress or suit of clothes. They never made a trip or had a night out. The children were equally frugal. Bruene gave each of them a checkbook on his own bank account to take to school to use whenever necessary. He was always amazed at how seldom a check was ever drawn.

Price ceilings and parity

THEN came World War II, the cry for all-out production and seven years of uninterrupted high prices. Bruene stepped up his own output, prospered and paid off all the debts he had assumed when acquiring the farm after his father's death. He would surely have made still more money, but the government in 1942 clamped price ceilings on all his products. He did not especially mind. "The ceilings didn't hurt bad," he says. "I still think we were getting a fair return." Some other farmers, and especially their lobbyists and the politicians trying to anticipate their wishes, did not agree. There was some thought that the U.S. might be facing the same kind of farm collapse, once the war ended, that followed World War I. Farmers were being asked to expand all they could, a factor which might aggravate the collapse, and yet were being limited on the prices they could charge. In answer to this kind of argument, Congress passed a law stating that farm prices would be maintained at a minimum of 90% parity for two years after the shooting stopped.

Parity is one of the strange concepts that has grown up in the political thinking about agriculture. It means a price—for a bushel of wheat, for example, or for a bushel of corn—which brings the farmer enough dollars and cents to purchase exactly as much goods—say overalls, seeds, pitchforks or automobiles—as the price of a bushel of wheat or corn bought for farmers in the years 1910–1914. If the reader finds himself perplexed by the logic of this, or why those particular years should have been chosen, he need not apologize. Half the politicians who throw the word around do not understand it either.

It is the parity concept and the 90% guarantee promised during the war that put our government farm policy in its current mess. Ever since the 90% guarantee was supposed to expire, each succeeding Congress has been inclined to extend it for another year, postponing the day of reckoning. Making the old prewar period seem like the good old days, CCC now has invested $6.6 billion and owns 7 million bales of cotton, 722 million bushels of corn and 1.9 billion bushels of wheat, not to mention substantial amounts of butter, peanuts, honey, wool, barley, cottonseed oil and turpentine.

If it were not for the government stocks, however, U.S. agriculture might be thought to be in pretty good shape. Fred Bruene is an example. He came out of the war debt-free (so did most U.S. farmers). His land is in better shape than ever because of such conservation measures as contouring and terracing (so is the land of most farmers). He can produce a great deal more than ever before (so can all farmers).

U.S. farming has advanced so rapidly in the last 15 or 20 years that it hardly resembles agriculture as previous generations knew it. During the farm depression of the '20s and the general Depression of the '30s, scientists and inventors were creating marvelous new machinery, new fertilizers, new pesticides and new seeds. At the time very few farmers had the money to buy them. But when war gave farmers an unlimited market, these aids to production were pulled down off the shelf and set to work all at once. With their help and the permission of the weather, U.S. farm output rose by a fantastic 33% between 1938 and 1944. It has now gone down a little, but the capacity to produce, when and if the market demands more food, has kept rising. The Bruenes' records over the years provide an example of what happened. Back in 1933 Fred Bruene and his father still depended largely on the power of six horses. They owned only $635 worth of crop machinery plus some special equipment—an ensilage cutter, grain elevator and part interest in a threshing outfit—which they valued at another $286. Now Fred and his son Dick, whom he has taken in as a full partner, have added item after item until their inventory sheet lists 66 different pieces of equipment: three tractors plus full accessories including plows, planters, cultivators and pickers; a combine, mower, sprayer, hay chopper, corn sheller, feed grinder, forage blower, milking machine, milk cooler and so on down a long list. They now value their machinery and equipment at around $11,000, their buildings, exclusive of the house, at around $13,000. It costs them something like $6,500 a year just to keep their equipment in repair and provide it with gasoline and electricity.

In the new farming tradition Fred and Dick Bruene are trained at a half dozen or more highly skilled operations. They are soil experts

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PORK CHOPS ON HOOF, a crop of crossbred Yorkshire, Hampshire and Duroc pigs, get their scientifically blended feed supplement from Fred Bruene.

BEEFSTEAKS ON HOOF, young Hereford steers being fattened for market, look on complacently as Dick Bruene carries a tub of feed through the barnyard.

FARMER AND GOVERNMENT CONTINUED

and animal breeders, with a herd of purebred Holstein dairy cows that produce more than three times the average amount of butterfat a year and Yorkshire hogs that provide more and better pork. They are comfortably at home in the ramifications of veterinary and nutrition science, mixing their own feed with vitamin and antibiotic additives. They are machine operators and mechanics. And their capacity to produce has grown by leaps and bounds. In the early '30s Fred and his father got an average of 49 bushels of corn an acre; now Fred and his son get around 85. In the early '30s they could handle around 70 head of cattle a year, now twice that many. Hog production has almost tripled from 108 a year to 298. Since the Bruenes seem always to have worked to just about the limit of human capacity, these increases are completely attributable to the farm revolution.

What with higher production and higher prices the Bruene farm has come a long way from the early '30s, not to mention the early '80s. In the Depression years the Bruenes were selling anything and everything that might raise a little cash: some of their soy bean seed, some potatoes from their own meager supply, a spare puppy for $3. But recently their cash income has been running upwards of $30,000 a year. After deducting expenses, but adding what the farm provided them in food and fuel for their own use, they figure that the farm has been netting them around $14,000 or $15,000 a year, a sum that most city dwellers would consider not bad at all.

Lest these figures start a migration to the country, it must be pointed out that under modern farming conditions the Bruenes are more or less in the position of two partners in a fair-sized manufacturing business—and a highly speculative business at that. Anyone who wanted to buy a farm like theirs today, with the same quality of land and all the equipment, would certainly have to invest upwards of $100,000. Their livestock represents perhaps $20,000 more. Their fixed expenses every year for things they could not possibly do without, such as seed, gas, oil, electricity, transportation and essential supplies, run around $8,000. In other words they have capital of $120,000 tied up and are committed to spend another $8,000 a year regardless of how much they succeed in growing or what price they get for it.

Charles Bruene, the founder of the farm, was a conservative man. Fred and Dick Bruene are also conservative men at heart, yet the very nature of their business has made them big-scale gamblers. Farming today has ramifications that extend far from the soil. It involves a complicated and highly sensitive web of the big factories that make chemicals for fertilizer and pesticides, the railroads and trucking firms that move these things to the farm and take the produce away, the food-processing plants, the stockyards, the drug industry which makes hormones out of meat-packing by-products. The two million important U.S. farmers today sell 94% of everything they produce and buy most of what they use. The strangest and apparently most unrelated matters can send their income way up or way down. One major reason for the current butter glut, for example, is the rise of detergents since 1948. Billions of pounds of farm-grown vegetable and animal fats were formerly used to make soap. Now the market has been taken over by the chemicals which form the base of detergents and we have a surplus of fats backing up all the way to the dairy farms.

Whether in boom or in bust, the farmer's prices always move faster than anyone else's. Fred Bruene has watched the price of his corn leap from 63¢ a bushel before World War I to $1.52 in 1918, then drop to 52¢ in the panic of '21. He watched it climb again to 85¢ in 1927 and plummet to 32¢ in 1932, rise to $1.04 in 1936 (a drought year) and drop to 49¢ in 1938, skyrocket to $2.16 in 1947 and subside to $1.52 in 1949.

There is not much that a farmer like Bruene can do about the price swings. He has no way of speeding up his production quickly to take advantage of high prices: his corn, his pigs and his calves just keep on growing at their standard rate. Nor can he cut production quickly when prices go down or lay off a human helper to reduce expenses. Practically all labor on the Bruene farm—indeed 80% of all U.S. farm labor—is provided by farmer and family. The farmer can only keep producing and hope for the best.

The Bruenes of America are very prosperous at the moment. But they could very quickly start to lose money faster than they are now making it.

Obviously the U.S. needs families like the Bruenes. Our population is growing at the rate of around 2.7 million a year. Our cropland is not growing at all. We will perhaps create some new acreage by draining swampland and irrigating desert, but for every acre gained we are sure to lose at least another acre to suburban housing developments, factory expansion, new airports and new highways. To feed our new millions in the manner to which we have all become accustomed, we need energetic, conscientious farmers quick to adopt all the new methods and all the new machinery.

Food for 500 million

IN one sense we shall have a surplus of food for years to come. Our farmers, with their modern machinery and modern skills, can actually turn out enough foodstuffs to support around 500 million people on an Asiatic-type diet of grains, plus just the amount of meat from cattle grazed on pastureland unsuitable for any other purposes. What they in fact do, of course, is feed most of what comes from the soil to animals, shrinking it to enough of such more desirable foodstuffs as eggs, milk, butter, poultry and meat to feed our population of 163.5 million.

In the past the law of supply and demand has regulated the amount of shrinkage, and not too badly either except during such unusual periods as the '20s and '30s, when the upheavals of the agricultural revolution were compounded by the worst business depression in

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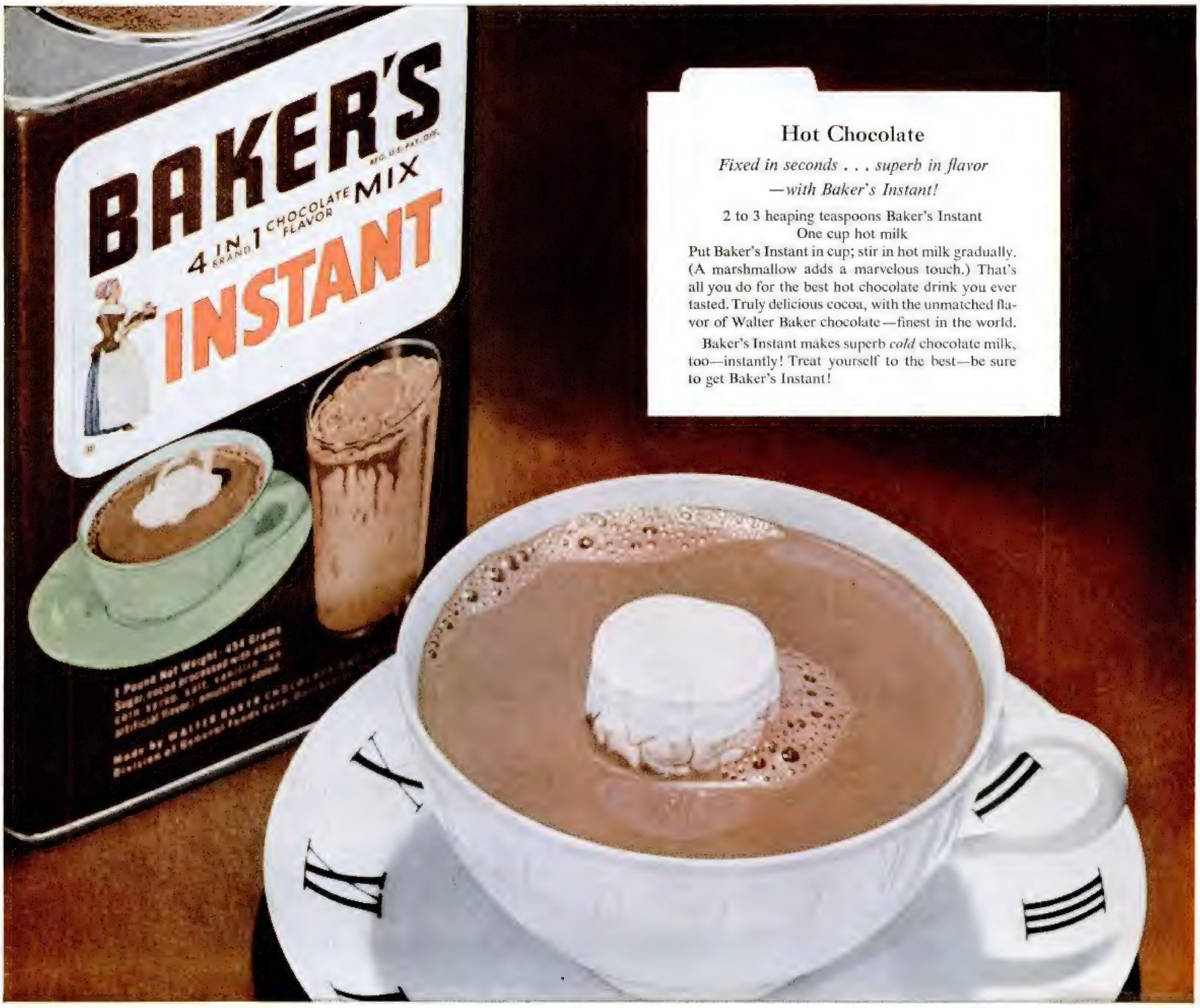

Chocolate makes it good...Baker's makes it best

R.S.V.P.

a sure way to get an "answer" when you give 'e

THIS is an invitation to a brand-new and unmatched driving experience—an invitation extended to you by the Buick dealers of America.

You are invited to take the wheel of a 1955 Buick—start the motor—set the Dynaflow lever in the "drive" position—and push down the accelerator pedal.

In the last half inch, you pass the "full throttle" position — and set in motion something which has never happened before in an automobile.

You bring into action twenty "variable pitch propellers" deep inside the Dynaflow Drive.*

These propeller blades change their "pitch" like the propellers on an air liner, and what that does to getaway from a standing start—or for a safety-surge when it's needed out on the highway — is something you can only believe from firsthand experience.

So that "R. S. V. P." means, in this case, "really sensational variable pitch"— but it also means the traditional "please reply to this invitation."

You'll find the 1955 Buicks worth seeing and trying for many reasons. They're advanced in style, improved in appointment, stepped up to record-high power — with 236 hp in the ROADMASTER, SUPER and CENTURY, and 188 hp in the SPECIAL.

But in Buicks — and Buicks only — will you find the drive that's the thrill of the year.

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SEE YOUR BUICK DEALER

When better automobiles are built Buick will build them

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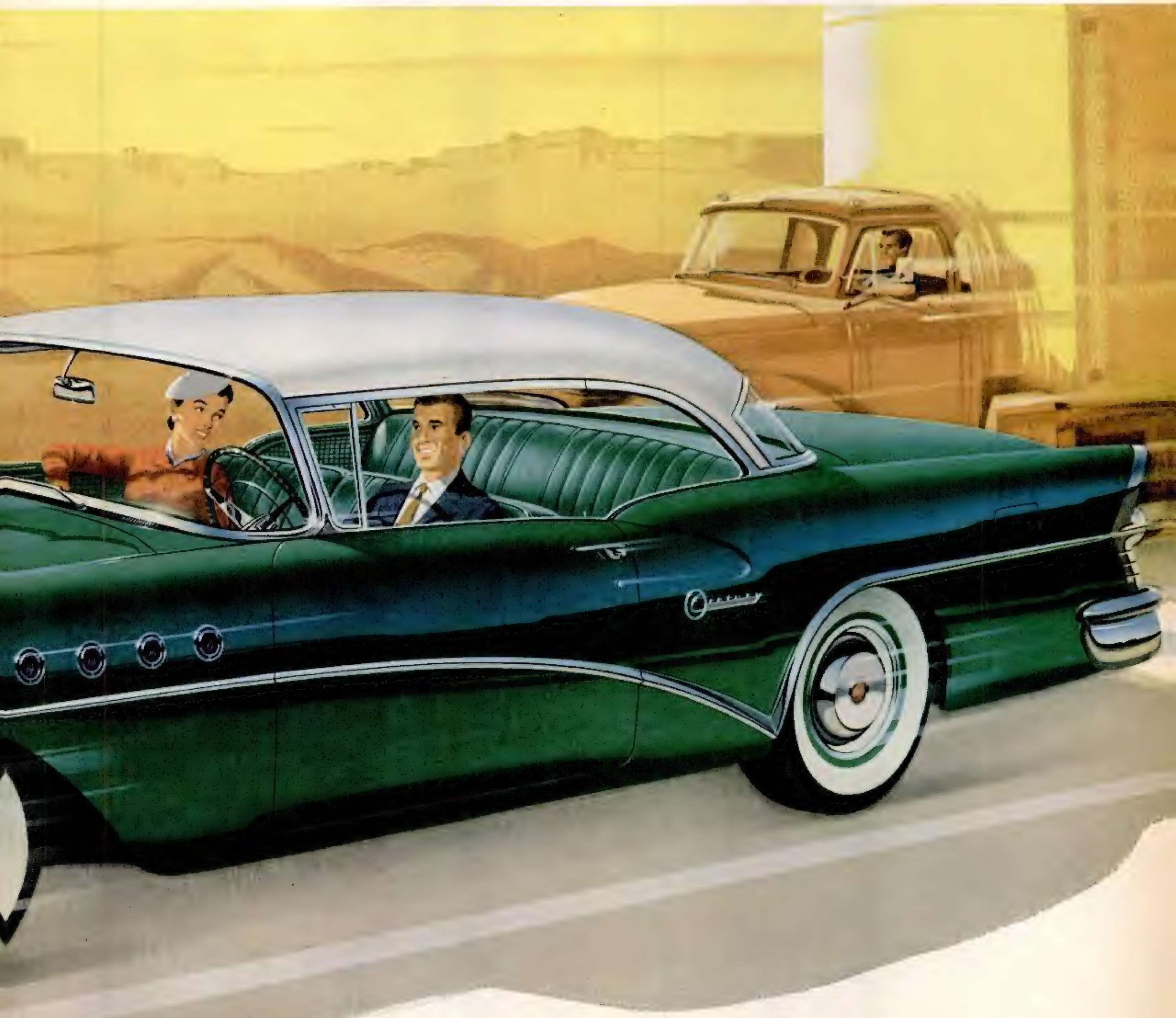
For 1955 it's a thriller in STYLE, POWER, PERFORMANCE!



Thrill of the year is Buick

Look at all the ways you can use this Franco-American Beef Gravy

It's ready to serve, rich, smooth, low in calories

Hot roast beef sandwich (restaurant style). Slice down the last of Sunday's roast. Place meat on bread or toast, and ladle on plenty of hot Franco-American Beef Gravy. Perfect "hurry-up" dish!

Burgers on Toast! Mix 1 pound ground beef, ½ teaspoon salt, 1 chopped onion; shape into 4 burgers; brown in skillet. Pour off excess fat, add 1 can of Beef Gravy, heat. Serve on toast.

Make meat loaf taste beefier! Use Franco-American Beef Gravy as the moistening ingredient in your favorite meat-loaf recipe. And before serving, ladle on more of that smooth gravy.

IF YOU haven't discovered Franco-American Beef Gravy, you have a whole exciting new world of recipes to try!

This is rich, velvety-brown Beef Gravy, with that real roasting-pan flavor—ready any time you want it—and especially wonderful when there isn't a smidgen of gravy-making meat in the house.

It's made from quality lean *beef*, onions, celery and ten other ingredients, all blended into a smooth, rich consistency. Perfect gravy that looks and tastes *homemade!*

Suggested here are just six of the many easy ways to use this marvelous Franco-American Beef Gravy. There are more recipes on every Beef Gravy can.

Hash Patties! Do you have your favorite corned beef hash on hand? Simply slide hash out of can, slice, brown in skillet. Pour bubbling-hot Franco-American Beef Gravy over each patty.

Beef Gravy Shortcake! Brown ½ cup chopped onion in 2 tbsps. shortening. Blend in 1 can Beef Gravy, add 1 cup cooked cubed beef. Cook 10 minutes, stirring often. Serve on hot biscuits.

Nifty dish from leftover meat! Got a cupful of chopped cooked beef? Add 1 can of Franco-American Beef Gravy, heat, and pour over steaming-hot noodles. This makes a man-sized main dish!

DIET NOTE: Franco-American Beef Gravy has *very few* calories. About one-quarter the number you get in home-made gravy. So you can ladle it on generously, with no qualms about weight!

history. The Bruene farm has been a typical shrinkage operation. The Bruenes, free enterprisers if there ever were any, saw that there was money to be made by converting corn into milk, beef and pork, and still more to be made by improving the quality of the hogs and the dairy herd. Had the trend ever switched and had it become more profitable to sell the corn instead of the meat, the Bruenes would have known this at once from their books and would have adjusted. A family like the Bruenes can trim to the shifting winds of the agricultural climate. They can handle new machinery and techniques or get along with the old. They can even pull in their belts in bad times and keep going practically indefinitely. Their farm is not only a source of income but also a way of life.

Since the Bruenes are such deserving and important people, most voters probably would favor providing them—in these days when various attempts at economic security for city workers have had such general acceptance—with some kind of minimum wage or unemployment insurance. Sitting way out there on the end of the pendulum of economic fluctuation, they obviously need some kind of protection against violent price declines, greater than any the rest of us are risking, which might bankrupt them.

There is probably nothing wrong at all with the basic idea of minimum farm prices, supported by a government program of loans to keep crops sealed and off the market in times of panic and glut. The only trouble would seem to be that the politicians have got to fiddling with the minimum and have raised it to ridiculous levels. When the politicians talk about giving the farmer parity based on the conditions 40 years ago, they are talking the sheerest nonsense. In the dear, dead days of 1910–14, on which the parity concept is based, the Fred Bruenes of America knew nothing about the tractor, the Rural Electrification Administration or DDT. The parity idea totally ignores the whole agricultural revolution, which enables a farmer nowadays to grow as much wheat in three hours of labor as he could then grow in 10 hours. It also ignores the fact that wheat, for example, is no longer such a desired product as in the old days when a less prosperous generation of Americans was eating a great deal more bread and macaroni instead of steaks and chops.

Have we got wheat!

EVEN at 90% of parity, the level at which wheat has been supported ever since 1944, the government guarantees the wheat farmer $2.24 a bushel. The average cost of producing a bushel of wheat in the U.S., including all labor and land rental, is around $1.75. The wheat farmer is thus guaranteed a profit of almost 50¢ for every bushel of wheat he can possibly produce by buying or renting more land, hiring more laborers and acquiring more machinery. It is no wonder that we now have wheat bursting the sides of grain elevators across the land, the holds of moth-balled ships from the Hudson River all the way around to Puget Sound, and even a vast mushrooming of temporary storage tents manufactured for this very purpose. There will continue to be a wheat glut until Congress lets it become less of a sinecure to grow wheat and the wheat farmers return some of their fields to other crops or to pasture. Cotton is in much the same position.

Since Fred Bruene is primarily a livestock farmer and has to buy additional corn or other feed each year for his animals, his own feelings about government farm policy are perhaps not entirely unprejudiced. However, his thoughts are at least worth noting as the opinions of a real practicing farmer of proved intelligence and enterprise. Looking back over his long career, he says, "The emergency measures of the '30s were necessary and they were helpful. I don't know what we would have done without them during the worst of it. The ever-normal granary was one of the soundest ideas we've ever had in this country because we have to have some kind of program to give the farmer the same sort of protection that minimum wage laws and tariffs and those things give other groups. The sealing and loan program can help prevent fluctuations and also provide the farmer with the short-term credit which he needs in tremendous amounts in his normal operations. Basically it's a good program; it gives the farmer credit at a low interest rate and keeps the supply of food steady.

"The only thing is that corn has been sealed way too high. Ninety per cent of parity won't work, we can see that now. Butter has been priced out of the market and now corn almost is. This whole farm program has become too much of a political football, and it shouldn't be any more than a public school should be.

"I can't understand those fellows who want the government to guarantee 100% of parity. If you wanted that kind of guarantee, you'd have to control everything, and that's not our way. Besides, it's more fun this way, taking your chances and hoping."

Like many farmers, Bruene has a sneaking suspicion that the farmer is asked to take more than his proper share of the burden

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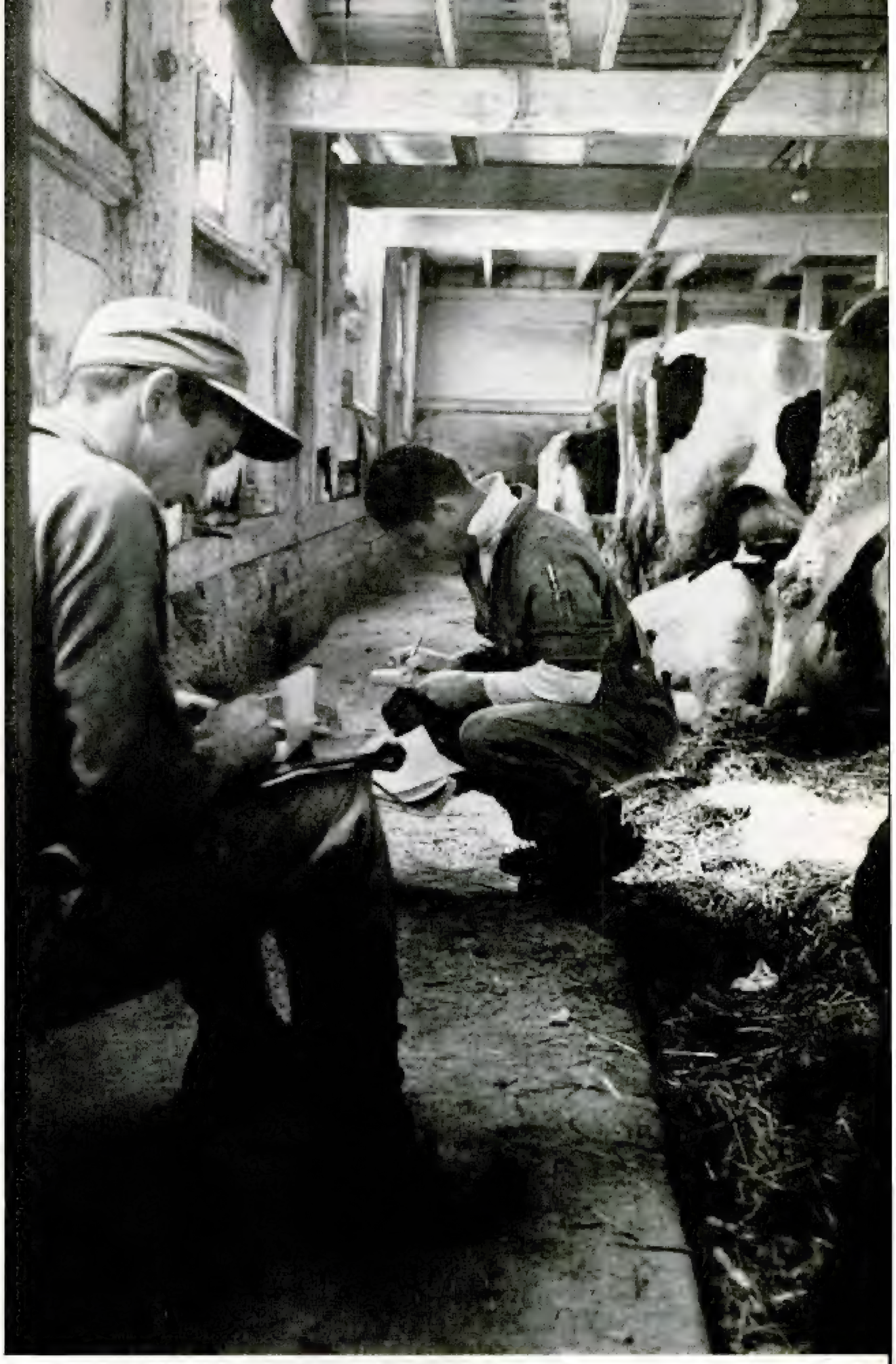

HELP FROM EXPERT is given on artificial insemination, a modern technique on farm. Dick writes check for fee while expert (*right*) makes out registry papers.

REPORT ON MARKET comes to Dick by radio at breakfast time. If prices seem to be weakening, he often sells marketable cattle at once by telephone.

BULGING FOOD FREEZER, capacity 22 cubic feet and stocked mostly with their own stuff, is one of conveniences the Bruenes have added to kitchen.

FARMER AND GOVERNMENT CONTINUED

when prices decline. "I'm not opposed to cuts in some farm prices," he says, "but first I'd like some assurance that the farm economy isn't the *only* thing that's going to adjust." As to the need for adjustment, he says, "We've got to go into a settling-down period here. We've had a major war, a big world market and Korea, and for a while there a man didn't get paid for farming but just for owning stuff. It didn't matter if you paid too much for something because the price was going up anyway and you'd get it back. Now that can't go on and on; it's got to stop sometime. So here we are now with surpluses, and they're hard to get rid of.

"I don't know what the answer to this surplus thing is, but I don't think it lies in payments that are mostly political plums. It seems to me surpluses could be avoided by building up fertility on the farms—cutting grain crop acreages and planting to legumes and soil-building crops. I suppose maybe you'd have to make payments to get people to do it, though I never have understood why farmers should have to be encouraged to practice soil conservation. It ought to be their business. The earth is what they're working with and they ought to want to preserve it."

This sort of sentiment, so different from the "gimme" attitude which lobbyists and politicians cynically attribute to all farmers, is perhaps the reason that Secretary of Agriculture Ezra Benson, the first government official to do anything sensible about the farm program in a good many years, has managed to survive so well. Secretary Benson personally pushed through Congress in 1954 a new farm bill reducing government support levels on basic farm commodities from a rigid 90% of parity to a flexible level of 82.5% to 90% of parity depending on supplies. He also induced Congress to change the calculation of parity slightly to allow for changed farming and eating habits; under the new formula, for example, parity for wheat will be somewhat lower. A good many politicians figured at the time that even this modest step toward letting prices find a more sensible level was a form of political suicide by Benson and would probably cause a farm belt revolt against the Republican party in the November elections. On the contrary, Benson seems to be highly respected in the farm country and the Republicans made out fine among farmers.

The alternative to Benson

AT the moment the nation seems to have a pretty clear choice between what Secretary Benson and farmers like the Bruenes feel is the right course, and a continuation of the political timidity and the great gluts of our recent farm history, with their resulting tremendous costs to the government. The old 1929 Federal Farm Board was right: it is impossible to guarantee the farmer high

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NOW! A REAL IMPROVEMENT IN FITTED SHEETS

Cannon's new exclusive "Ezy-Matic" Corners give you the easiest bedmaking ever

No more tug-of-war with your mattress!

No more struggling to get a fitted sheet over that last unyielding corner of your mattress.

Cannon Fitted Sheets have new patented corners *so you don't even have to lift your mattress!*

No ties! No snaps! No elastic! The secret is the design of the "EZY-MATIC" Corners, exclusive with Cannon.

These sheets are so easy to slip over the corners of your mattress—*you can do it with one hand!* Whether you have a firm mattress with rigid edges or a soft one with rounded corners! Never pull out—never need tucking. Stay snug and smooth. And remember—like all Cannon Percales. these fitted sheets are *Combspun* for cool, smooth sleeping—long, long wear.

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NEW SOCIAL LIFE brightens Bruene farm. Here Dick and his wife, at left of table in foreground, entertain friends at a buffet supper and bridge party.

FARMER AND GOVERNMENT CONTINUED

prices without at the same time controlling production. The Bruenes' record over the years would surely discourage anyone but the most megalomaniac bureaucrat from attempting to mastermind all the myriad factors that go into controlling production. If we follow the records back to 1933, we find that in that year Fred Bruene planted 89 acres of corn and grew 5,518 bushels. The next year, in accordance with the old AAA crop restriction program, he planted only 79 acres. But this little 10-acre cut in planting had far less effect than the drought of '34, which saw to it that he harvested no more than 3,002 bushels, for a production decline of 45%. Something of the opposite occurred in the years 1951 and 1952. In 1951, at the height of the Korean war demand, the Bruenes planted 93 acres and harvested 6,696 bushels. In 1952 the market seemed to be tapering off and the Bruenes, like a lot of other farmers, cut their planting, seeding only 78 acres to corn. But the weather was so absolutely perfect in 1952 that their actual harvest rose to 7,466 bushels. They cut their acreage by 16% yet got a 12% jump in production.

Aside from the impossibility of controlling production, the government also runs the risk, every time it sets the support price of a farm commodity too high, of freezing the status quo. It keeps all the old producers in business at the same old stand, regardless of whether they have lost their real economic usefulness, and it keeps out any new farmers or new farm areas that might do the same job better at a lower price. The flexibility that our agriculture had in the old days, when it kept moving west—to the great sadness of those left behind but to the vast ultimate benefit of the nation—can be given a kind of hardening of the arteries. Even the delicate pattern by which we shrink macaroni and corn mush for 500 million people into ham, eggs and ice cream for 163.5 million can be thrown badly off kilter. There is no question that the government, in sealing $3.8 billion of wheat and corn, has kept a lot of pork chops and hamburgers from the U.S. dinner table.

The real lesson to be learned from the Bruenes is that the U.S. farmer, if given half a chance, can more than take care of himself—and of the rest of us. In our hypersensitive economy, the government doubtless has to ensure him that half a chance. When it tries to ensure him anything more, especially such an absurd thing as a rigid 100% or 90% of that prehistoric formula called parity, it can only get him—and the rest of us—in trouble.

While Fred Bruene was going over the records of his farming career with LIFE representatives for this article, he was asked if he had any questions on farm policy he would like to put to the Administration. After consultation with his neighbors, he got up a number of questions which were transmitted to Secretary of Agriculture Benson. The dialog between Mr. Bruene and the Secretary is on pages 58 and 59.

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SPEAKING FOR HIMSELF and his neighbors, Fred Bruene formulated questions appearing on these pages for Secretary Benson.

MR. BENSON AND MR. BRUENE TALK IT OVER

Q: *With most segments of the national economy operating on a profitable basis, why has farm income been dropping and why have farm price supports been lowered?*

A: Inflation and the insatiable demands of war kited farm prices to record highs in the 10 years following Pearl Harbor. As these twin forces waned, farm prices inevitably declined. The parity ratio, which measures prices received by farmers against those paid for goods and services, plummeted from the Korean War peak of 113, in February 1951, to 94 at the time this Administration took office two years ago. Since then it has averaged about 90.

Domestic demands for most farm commodities remain strong. Export demands are sharply down from such years as 1948 and 1951 but are trending upward again. The postwar rehabilitation of world agriculture has been completed, with production in most countries well above prewar. Contributing further to the reduction in farm exports is the fact that our foreign economic assistance programs have been slashed.

American farmers have continued to produce near-record amounts of such important export commodities as wheat and cotton. High, rigid price support incentives, continued long after wartime demands had abated, encouraged mounting surpluses which in turn depressed free market prices in this country.

Actually, the entire decline in farm prices occurred under the program of supports at 90% of parity which was supposed to prevent this very thing. The new system of flexible price supports, embodied in the Agricultural Act of 1954, does not become effective until the 1955 harvest. One purpose of flexible supports is to encourage better-balanced farm production. Under this system supports can go up as well as down. They will be high when supplies are in reasonable balance with demand. They will be lowered to act as a brake on further overproduction when supplies become excessive.

Q: *Dairymen, at least in our region, are just about breaking even under 75% of parity supports and high feed and labor costs. What would you advise them to do?*

A: If I were a dairyman today, as I was for many years, my first action would be to take a hard look at individual production records of the cows in my herd. I would get rid of the poor producers. About all a dairyman gets from a cow which gives only 5,000 or 6,000 pounds of milk per year is her companionship.

Next, I would attempt to determine whether I was getting the best possible return from dollars spent for labor, feed and other costs. Some of our experiments show milk profits can be sharply increased through use of more good quality roughage and less of the costly feed concentrates. I would actively support the campaign of milk producers and affiliated groups to promote more aggressive merchandising and increased consumption of dairy products.

The dairy industry is going through a period of serious readjustment. If price supports at 90% of parity were the answer, there would be no problem. We had such supports until April 1, 1954. Since that time, with the lower supports, surplus milk production has leveled off, consumption is increasing and government buying of dairy products has dropped markedly. Meanwhile, we have been able to move large quantities of government-owned butter, cheese and dried milk into channels of consumption.

During the final months of 1954, farmers received an average of about 86% of parity for all milk—approximately the same as in March, before the level of support was adjusted. Cash marketing receipts of dairy farmers declined by a larger amount in 1953, under 90% supports, than they did in 1954 when supports were at 75%.

I do not maintain that all of the dairyman's problems are over. We are headed in the right direction, however. I believe the future of our dairy industry is bright. And it will be back on its feet sooner under the present program than it would have been had we refused to face the facts.

Q: *Do you think price-support cutbacks for farm products are being fairly shared among producer, processor and distributor?*

A: Price supports for dairy products were cut back in April last year. No reductions in price supports have yet taken place for other food products. Retail prices of butter averaged about 10¢ per pound lower in the second quarter of 1954 than in the first quarter. The price received by farmers for an equivalent quantity of milk and cream dropped 7¢.

Farmers got about the same proportion of the retail price of butter in each quarter. Prices of fluid milk, cheese and evaporated milk have declined about the same amount at retail as at the farm. This means that the farm-retail price spread for these dairy products has remained about the same and farmers are receiving a smaller share of the consumer's dollar.

Q: *Could the USDA carry out a more aggressive educational program so that both urban and rural people might better understand such things as the producer-middleman-consumer relationship and the difference between guaranteed prices and a floor?*

A: The cooperative extension service of USDA and the land grant colleges are cultivating better understanding among farmers, marketing people and the consumer through regular programs. Millions of urban consumers are reached through extension work in marketing information, through newspapers, magazines, bulletins, radio and television.

Extension educational work in marketing with farmers and with food handlers and distributors helps to bring better understanding of mutual problems. Extension has expanded and strengthened its educational program during the past year in marketing group-consumer relationships. Emphasis has been placed on mutual problems of town and country people. Extension has a program aimed at providing consumers with more information about food supplies and problems involved in production and marketing of foods.

Q: *Farmers are told that one reason for their diminishing share [now 43%] of the consumer dollar is the expensive special processing of food demanded by the consumer. Is the consumer paying a just share of this extra cost?*

SPEAKING FOR GOVERNMENT, Secretary of Agriculture Ezra Taft Benson answers Mr. Bruene's queries on farm program.

A: It is true that farm-retail price spreads for many food products have increased in recent years because the housewife is buying additional marketing services in the form of processed, packaged and ready-to-serve foods. However, these spreads also have widened because of increases in wages, transportation rates, rents, utilities and most other marketing costs. We cannot determine how much of the increased spread should be attributed to the cost of the added marketing services. Better foods for consumers, however, are likely to help farmers increase their incomes. We have some evidence that indicates consumers do spend a larger proportion of their income to have more attractive and convenient foods. A part of these added expenditures has gone to farmers.

Q: *Do you believe that the productive capacity of farmers will remain ahead of the food demands of the population?*

A: The productive genius of the American farmer is such that I am confident he will keep pace with increasing demands, at least in the foreseeable future. By 1970 there may be 200 million people in the United States. We shall have to provide food and fiber for them from approximately the same acreage we have in production today. That will require an overall increase of about 25% in agricultural output. We have done far better than that in the last 15 years.

Changing dietary habits of the American people, with greater emphasis upon meats, eggs, some dairy products and fresh fruits and vegetables, indicates that in the years ahead we may need substantially greater production of such foods.

Today our problem is largely one of unbalanced production, rather than of general overproduction. I believe we will achieve better balance.

Q: *Mr. Secretary, would you advise a young man to take up farming as a career today?*

A: My advice in such a matter would be determined largely by the young man's own character, training, interests and capabilities.

I look to the future of American agriculture with complete confidence. It offers a satisfying way of life to young men and women who are willing to accept a part of their reward in values which cannot be measured in terms of money. Farming affords the pleasures of outdoor living, of working with animals and growing things, of being closer to nature and, because of that, perhaps being a little closer to God. The financial rewards are not unlike those of most other occupations. They range from poor to excellent, depending in large measure upon the capabilities of the individual farmer and the potential of his agricultural plant.

Successful farming today requires a considerable capital investment. I would be slow to advise a person to embark upon a career in agriculture without sufficient financial backing.

We have always had ups and downs in farm income just as we have had them in national income. While it is true that farm prices have declined during the last three years, I am confident that in the future we will also have prolonged upturns. Farm income in 1955 should be near the 1954 figure. The long-term outlook is brighter.

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And now the day is coming closer when you and every motorist in America will judge the results of this unprecedented effort.

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Those in the industry who have seen the new Packard call it *fabulous* . . . and search their vocabularies for stronger words. Men who have spent their lives in the industry come out of the model room as enthusiastic as the starriest-eyed apprentice designers. The great new Packard will be chosen by many fine-car buyers for its beauty alone . . . and its inimitable Packard good taste. Yet *beauty* is only the *beginning* of the new Packard story.

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But the most glowing reports of all are those from veteran drivers . . . men with ice water in their veins . . . who come away from Packard's proving grounds high in their praise of the ride that literally "levels the load . . . smooths the road." Even those who are familiar with Packard's 55 years of leadership in "ride" agree that *nothing in your previous motoring experience has prepared you for the incredibly even and shock-free new Packard Torsion-Level Ride!*

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For the medium-price field, Packard craftsmen have built . . . with traditional Packard precision . . . an excitingly new line of Clipper cars. The new Clipper will be especially appealing to those who desire *individuality in a medium-price car* . . . for here is the car that makes it smart to be different. The beauty . . . and spectacular V-8 performance . . . of the new Clipper will add an entirely new yardstick to the medium-price field.

★ ★ ★

You will do yourself a grave injustice if you buy *any* fine car or *any* medium-price car *until you have seen the New Packard and the New Clipper.* You have only a short wait for the first public showings of these great *new* automobiles.

Wait . . . See . . . and Drive . . . THE ***NEW*** PACKARD

Traditional dishes that do us proud

CORN HEADS A HISTORIC LIST

The dishes that American cooks turn out with most confidence and love are usually made of the country's oldest foods. Of these, none is as time-honored as corn, which Sir Walter Raleigh's captains described as "fair and well tasted." Biggest of the nation's crops, corn appears in all forms from coarse meal for breakfast bread to crisp snacks for cocktails and from syrup and oil to bourbon whisky. Below are a few of the uses of corn, most of them traditional to the American table. Other traditional American dishes and recipes for them are found on following pages.

CORN COLLECTION shows variety of uses. On chest is corn on cob, a jar of cornstarch, a jar of corn snacks. In open drawer, top left, is caramel corn. Next row from left: corn Fritos, popping corn, corn flakes; at bottom are yellow and white corn meal. On floor, back: spoon bread, corn relish, pitcher of corn syrup. Front row: corn bread, Indian pudding, corn oysters, johnnycakes.

Authentic fare with an American flavor

A cigar store Indian, a fierce American eagle and three old iron cooking stoves are venerable chaperones to the 10 dishes shown above. Time-honored recipes for making them are on following pages. Beginning left, on back of stove, are beans such as Indians grew which have been cooked as New England housewives did in pioneer days when they prepared meals on Saturday to be served on Sunday when Puritan Sabbath rules frowned on any work including cooking. Frying pan holds fried chicken

as the South insists it should be cooked. In foreground at left is chili con carne, a dish that grew up in the Southwest. Beside it is scrapple, a Pennsylvania Dutch concoction devised originally by housewives as a thrifty way to use up the pig's head and scraps.

The stove at right holds crab gumbo in a white tureen, a Creole specialty. Farm-style beef stew is in the copper pot next to it. Turkey hash, in the copper skillet right, has undoubtedly been served to use up turkey leftovers since the first settlers shot the first wild bird. Sautéed salmon steaks, a favorite dish of the Northwest, is in the foreground left. Center is cod chowder, a dish with a long history. Chowder was one of the country's first gourmet treats, though probably not always recognized as such. At right is pumpkin pie. Pumpkins, grown by the Indians, were served first by the Pilgrims as a plain pudding to eat. Later generations have both added pie crust and improved the flavor of the pumpkin.

CONTINUED ON NEXT PAGE

Short-order grub the most popular

Side by side with the venerable and authentic tradition of American cookery, there is a new but just as authentic tradition of short-order grub. The array above represents the country's most popular food consumed at sports events, picnics, circuses, at counters and in restaurants for breakfast, lunch and dinner. On the top row from left are doughnuts, coffee, Danish pastry and chocolate layer cake. On the second row down from left are chocolate candy bars, ice cream cones (the average citizen eats 17.8 pounds of ice cream a year), apple pie (the best-selling pie), milk, ham (the most frequently ordered sandwich). Next row down from left are hamburger on bun with potato chips, orange drink (oranges outsell all other fruit), a hot dog on a roll (6.5 billion hot dogs are eaten in U.S. per year), French fried potatoes and bacon and eggs, sunny side up.

RECIPES THAT GENERATIONS OF COOKS HAVE SWORN BY

SPOON BREAD

1 cup water-ground white corn meal
1 quart milk
2 tablespoons butter
4 eggs, well beaten
¼ teaspoon salt

Scald milk, stir in corn meal, salt, butter. When thickened, pour over eggs. Bake in greased 1½-quart casserole in hot oven (425°F.) 45 minutes.

CORN RELISH

5 cups cooked corn, cut from cob
½ cup chopped green pepper
½ cup chopped red pepper
¾ cup chopped onion
½ cup chopped celery
1 tablespoon prepared mustard
1 tablespoon mustard seed
2 teaspoons celery seed
¼ teaspoon ground turmeric
¾ cup sugar
1 pint vinegar
2 teaspoons salt

Combine ingredients with ½ cup water, simmer 30 minutes. Pack in hot sterilized jars, fill to overflowing. Seal at once. Makes 3½ pints.

CORN BREAD

¾ cup corn meal
1⅓ cups sifted all-purpose flour
1 tablespoon baking powder
1 egg, well beaten
1 cup milk
¼ cup melted butter
½ teaspoon salt

Mix dry ingredients. Mix egg, milk, butter. Stir all together until just mixed. Bake in greased pan (8x8x2) in hot oven (425°F.) 30 minutes.

INDIAN PUDDING

¼ cup corn meal
1 quart milk
1 cup molasses
½ teaspoon ground ginger
½ teaspoon ground cinnamon
1 teaspoon salt

Scald milk. Stir in corn meal, cook until thickened. Add other ingredients. Pour into greased 1½-quart casserole, set in pan of hot water, bake in slow oven (325°F.) 2 hours. Stir once after first hour. Serves 6.

CORN OYSTERS

1 cup whole kernel corn
2 eggs, well beaten
1 cup flour
1 teaspoon baking powder
½ teaspoon salt

Mix ingredients. Drop by teaspoon into ¼ inch of hot fat. Brown. Makes 12.

RHODE ISLAND JOHNNYCAKE

1 cup white corn meal
½ cup milk
1 teaspoon salt

Stir corn meal and salt into 1 cup boiling water. When thickened, take off heat. Add milk, stir until thick. Drop by tablespoon on greased griddle. Brown.

BAKED BEANS

2 cups navy beans
½ pound salt pork, halved
½ cup dark molasses
2 teaspoons grated onion
½ teaspoon dry mustard

Soak beans in water overnight. Cover, simmer 1 hour. Drain, save water. Put pork half in bean pot. Pour beans, other ingredients and ½ cup bean water into pot. Top with other pork half. Cover, bake in slow oven (300°F.) 5 hours, add bean water to keep liquid even with beans. Uncover, cook 1 hour.

FRIED CHICKEN

3 fryers, cut up
¼ cup flour
1 teaspoon salt
⅛ teaspoon freshly ground black pepper

Mix flour, seasoning in paper bag; add chicken and shake. Melt enough oleomargarine and vegetable shortening to cover chicken in skillet. Add chicken, cover, cook slowly 30 minutes. Uncover, drain fat, add enough water to cover bottom of skillet. Cover skillet again, simmer 30 minutes. Serves 6.

CHILI CON CARNE

2 cans kidney beans
2 pounds ground beef
1 No. 2 can tomatoes
2 cups sliced onion
3 cloves garlic, minced
¼ cup oil
4 tablespoons chili powder
½ teaspoon crushed red pepper
¾ teaspoon whole oregano
1 teaspoon salt

Sauté onions and garlic in oil. Add beef and brown. Add ¼ cup water and other ingredients, cover and simmer 1 hour, stirring frequently. Serves 6.

SCRAPPLE

1½ pounds pork shoulder
¼ pound pork liver
1 cup yellow corn meal
¼ cup finely chopped onion
⅛ teaspoon ground cloves
¼ teaspoon ground thyme
1 teaspoon ground sage
1 teaspoon ground marjoram
2 teaspoons salt
½ teaspoon freshly ground black pepper

Simmer meats in saucepan with 4 cups water for 1 hour. Drain broth and reserve. Bone and chop meats. Combine corn meal, salt, 1 cup cold water and 2 cups broth in saucepan. Cook, stirring, until thickened. Add meat, onions and spices. Cover and simmer 1 hour. Pour into loaf pan (9x5x3). Chill. To serve, slice, dip in flour and fry.

CRAB GUMBO

1 pound cooked crab meat
2 No. 2 cans tomatoes
1 pound okra, cut into ¼-inch pieces
1 cup diced green pepper
2 tablespoons flour
4 tablespoons butter
½ cup sliced onion
2 cloves garlic, crushed
1 teaspoon nutmeg
1 teaspoon gumbo filé powder
2 teaspoons salt
¼ teaspoon freshly ground black pepper

Sauté onions in butter. Stir in flour and brown. Add crab meat, vegetables, salt, all spices except gumbo filé powder, and 2 cups water. Simmer 1 hour, take off stove, add filé powder. Serve immediately. Serves 6.

FARM-STYLE BEEF STEW

3 pounds stewing beef, cubed
1 No. 2 can tomatoes
1 cup peas
12 small carrots
12 small onions
6 potatoes, quartered
½ cup flour
2 tablespoons fat
2 large onions, sliced
2 garlic cloves, minced
1 cup sliced celery
¼ cup chopped parsley
1 bay leaf
½ teaspoon ground thyme
1 tablespoon salt
½ teaspoon freshly ground black pepper

Melt fat in saucepan and brown meat. Add sliced onions, garlic, celery, parsley, tomatoes, spices, salt and 2½ cups water. Bring to a boil, reduce heat, cover and simmer 2 hours. Add other vegetables and simmer 1 hour. Blend flour with ¾ cup cold water and stir into stew. Serves 6.

TURKEY HASH

3 cups diced cooked turkey
½ cup soft bread crumbs
½ cup heavy cream
1 tablespoon butter
2 teaspoons flour
½ cup chopped green pepper
½ cup chopped onion
2 tablespoons chopped parsley
½ teaspoon ground sage
½ teaspoon salt
⅛ teaspoon freshly ground black pepper

Melt butter in saucepan, blend in flour and cream and stir until thickened. Add other ingredients. Sauté mixture in butter in large skillet 25 minutes.

SAUTEED SALMON STEAKS

6 salmon steaks
¼ cup butter
¼ cup apple cider
2 tablespoons prepared mustard

Spread salmon steaks with mustard. Melt butter in skillet, add cider. Sauté steaks 10 minutes on each side. Serves 6.

COD CHOWDER

2 pounds cod
1 2-inch cube of salt pork, diced
2 onions, sliced
4 large potatoes, diced
1 cup chopped celery
1 bay leaf
1 quart milk
2 tablespoons butter
1 teaspoon salt
½ teaspoon freshly ground black pepper

Simmer cod in 2 cups water 15 minutes. Drain. Reserve broth. Sauté pork until crisp, remove, reserve. Brown onion in pork fat. Add cod, potatoes, celery, spices, 1 cup broth and 2 cups boiling water. Simmer 30 minutes. Add milk, butter and pork. Heat, do not boil. Serves 6.

PUMPKIN PIE

2 cups strained cooked pumpkin
2 eggs, slightly beaten
1⅓ cup evaporated milk
1 9-inch unbaked pie shell
⅔ cup sugar
1 teaspoon cinnamon
½ teaspoon ginger
¼ teaspoon cloves
½ teaspoon salt

Mix ingredients. Pour into pie shell. Bake in hot oven (425°F.) 40 minutes.

Uncle's paper turkeys

We heard this story years ago, about a man who said he was successful in the stock market because he never forgot his Uncle's experience with a trap for wild turkeys—

The trap was a box about six feet square, with one side tilted up and supported by a pole. A long cord tied to the pole extended into the bushes where Uncle hid. When the cord was jerked, any turkeys that had wandered under the box would be caught. Trails of corn led to the trap, with a particularly enticing supply of kernels inside the box.

One day while Uncle waited, a flock of twelve turkeys approached. Eleven of them walked inside the trap.

"Just a minute," he thought, "and I'll have the other one."

But while he waited three of the eleven in the box walked out. He wished then that he had been content with eleven. Well, as soon as one of the three went back in, he would pull the cord. But five more walked out. That left only three turkeys inside. Surely, he thought, by waiting he could count on two or three returning, for there was still plenty of corn inside. But two more meandered out. Only one was now inside. While my uncle was trying to decide what to do, the one turkey joined the others and all went on their way . . .

The eleven turkeys he might have had were just paper profits!

Please, folks—let us make it clear—we do not bring this anecdote to your attention as a recommendation to sell stocks. There is a deeper and more important lesson to be learned from this simple story. The lesson deals with a philosophy of major market trends—a subject of first importance to both investor and speculator. This philosophy is explained in our study: "Turkeys and Major Market Trends." We will be delighted to send you a copy without obligation. Write: Box A, Research Department, Dreyfus & Co.

AT A STAND-UP SANDWICH SHOP IN BOSTON'S STATLER HOTEL, JOHN RONAYNE, A MAILMAN, HURRIEDLY WOLFS DOWN THE 75¢ SPECIAL OF SPAGHETTI, ROLL AND COFFEE

The U.S. Goes Out to Lunch

THE NOONDAY BREAK, MORE EFFICIENT THAN EPICUREAN, REVICTUALS A BUSY PEOPLE

Photographed for LIFE by ALFRED EISENSTAEDT

At the daily shriek of factory whistle, clang of school bell or simple growl of an empty tummy, workaday America rushes eagerly to cafeteria, lunch box, bean wagon or executive dining room for its meridian meal. It will ingest, in a period ranging from 10 minutes to two hours, more than $11 million worth of chow, efficiently and for the most part tastefully prepared, mop it up with 350 million slices of bread and wash it down absent-mindedly with 64 million receptacles of coffee and tea and uncounted cartons of milk.

In some more or less sophisticated areas the meal will be preceded by cocktails or accompanied by beer. It will take place in an infinite variety of places, some here portrayed by LIFE's roving lunchtime photographer, and it will vary in tone from a frantic rush (*above*) to frugal meditation (*p. 70*). European gourmets, to whom the hurried inhalation of hot dogs, hamburgers and poor boy sandwiches is an abomination, have for years been making doleful predictions about America's lunch-gobbling. Nevertheless the U.S. inner man has stood up to it admirably, and lunchtime, if no epicurean triumph, still fulfills its chief function—the revictualment of a busy nation.

CONTINUED ON NEXT PAGE

AUGUSTA, KAN.: COVERED-DISH CHURCH SOCIAL

Methodist churchwomen bow their heads in grace before monthly covered-dish luncheon, a standard Midwest social event to which each member brings a home-cooked dish, often takes home her own leftovers to serve her family for supper.

SEATTLE: EXECUTIVES AT DOMINOES

In Seattle's exclusive Rainier Club regional business bigwigs lunch sedately at special, individual side tables while awaiting opponents' moves. Major Northwest transactions are frequently settled over midday Rainier domino sessions.

HOLLYWOOD: SNACK BETWEEN TAKES

In the studio commissary on Paramount lot Film Star Angela Lansbury, wearing prop coronet and ermine from her morning stint as the princess in Danny Kaye's new movie *Court Jester*, munches plebeian hamburger next to Basil Rathbone.

FORT JACKSON: 40¢ AND 40 MINUTES

On South Carolina reservation Private John M. Lambert knocks off for 40 minutes during training to get down 40¢ worth of U.S. taxpayers' camp-prepared food: veal with gravy, mashed potatoes, greens, relishes, bread, jelly roll, coffee.

BENTON, WASH.: LUNCH AT 7:45 P.M.

American industry characteristically makes its own lunch hour. Mrs. Billie Ryan, shop clerk on the second shift at a Boeing assembly plant, finished coffee while waiting to play shuffleboard in aisles between nearly finished KC-97 transports.

ROME, GA.: LIONS' LUNCHTIME LAUGH

Weekly get-together of the local Lions Club, like thousands of other U.S. service club lunches, winds up with an intramural joke told in postprandial conviviality. Dollar meal of ham was preceded by *Silent Night*, pledge of allegiance and grace.

CONTINUED ON NEXT PAGE

BITE ON A BUILDING GIRDER

Chuck Haines, carpenter, relaxes on a sixth-story I-beam of a new Beverly Hills, Calif. bank and business structure, with ham and cheese on white.

NOON BREAK IN THE NORTHWEST

Emil Kantola, faller and bucker for Weyerhaeuser Timber Co., warms himself with sandwich, coffee and a fire in forest near Snoqualmie Falls, Wash.

FRUGAL SOLITUDE IN WASHINGTON

Secretary of State John Foster Dulles lunches alone in his State Department office on a salad of lettuce and cottage cheese, red apple and a pot of tea.

MOB SCENE IN MANHATTAN

Lunchtime shoppers and department-store workers jam the Herald Square Chock Full O' Nuts. The rush-hour eater waits five minutes, often eats in 10.

Text by HERBERT BREAN

Drawings by ROBERT OSBORN

Ages of Man: heartiness, stuffiness, then an inkling;
Leeriness, weariness, ultimate sinking

Heartburns sear a dread hot flash is,
Like boiling oil, or nine-tailed lashes

AMID ALL THIS

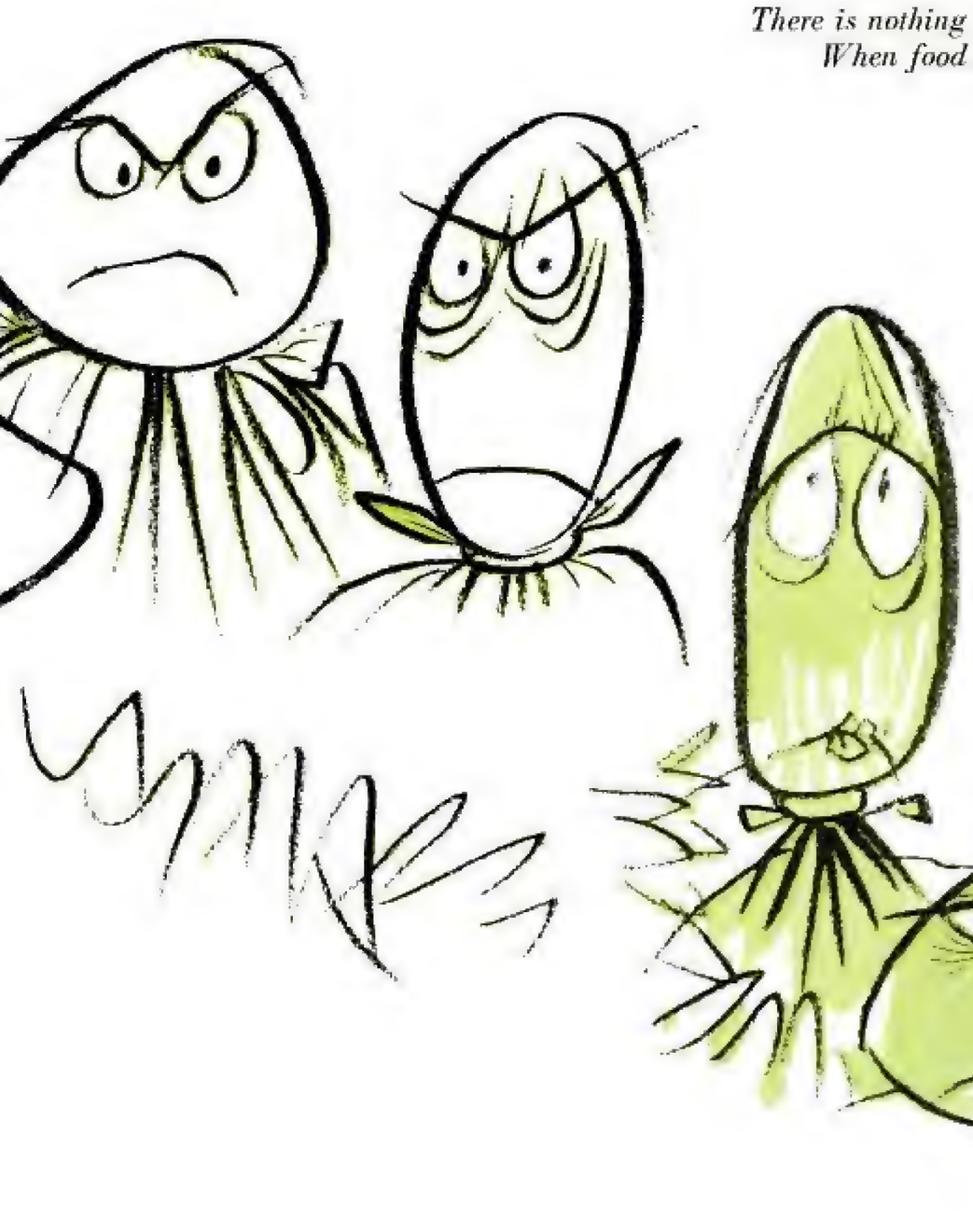
For though simply to eat is wonderfully sweet,

TO eat is human; to digest, divine," the eminent educator, Charles Townsend Copeland, once observed, and from all-night hamburger joint to *soigné* pressed-duck salon millions of too-well-fed U.S. citizens would chorus agreement. For it is a melancholy fact that the U.S., which annually spends $73 billion on food, also spends $65 million a year on antacids, protectives and other forms of stomach soother which it needs to help digest that food. Americans are surrounded with evidence that they are enormously capable at producing food, as the foregoing and following pages show. But at the simple, natural process of digesting that food, the U.S. is uncharacteristically inefficient, as the surrounding pictures suggest.

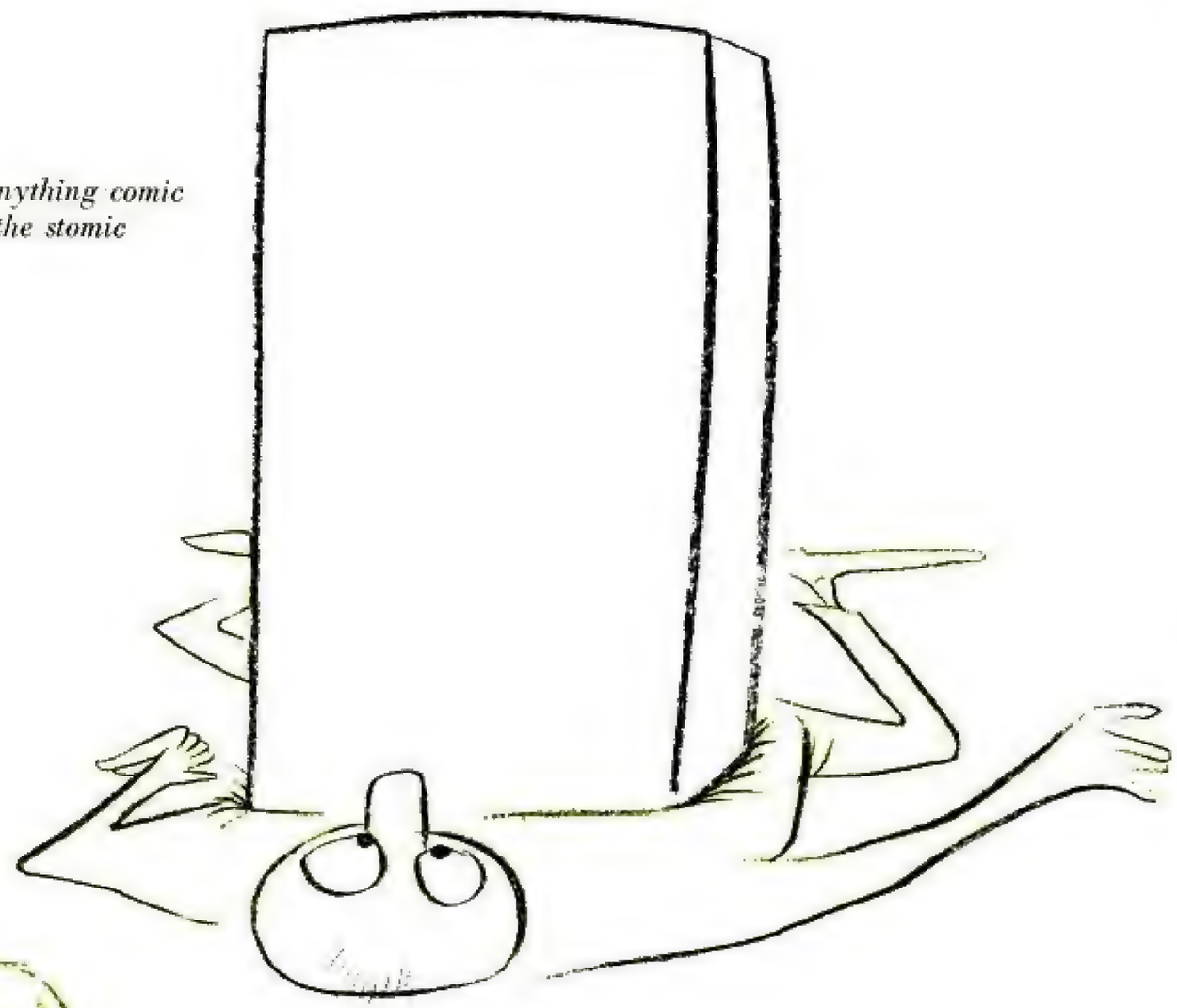
It is also remarkably ignorant, considering that virtually everyone suffers from indigestion at some point in his life, and that probably 25% of the population suffers from it periodically. Yet, when postprandial discomfort assails the average U.S. abdomen, its owner customarily diagnoses this as "gas on the stomach," cramps or stomachache, believing his stomach to be around or below his midsection. When dining is followed by a burning sensation under the breastbone, he ascribes it, often with considerable uneasiness, to "heartburn." If he finds himself belching, he takes bicarbonate of soda in the belief that this neutralizes stomach gas, and when he suffers an aftertaste of food or bad breath, he unerringly sets it down to "too much acidity," which conceivably could be the cause but usually is not. All of these self-diagnoses involve or are based on misconceptions.

Thirty feet of uncertainty

INDIGESTION is really a catchall word, without precise meaning to the medical profession, and one that signifies a variety of discomforts to the layman—abdominal pain, heartburn, hyperacidity, gas, cramps, nausea—that follow on the passage of food through the approximately 30 feet of human plumbing that comprises the human digestive system. This system, the purpose of which is to convert food into assimilable nutrition, starts in the mouth, where teeth and saliva begin the process of breaking down the solids by converting



There is nothing humorous nor anything comic
When food lies heavily on the stomic



PLENTY—OUCH!

the ultimate question, of course, is digestion

them into a soft mass. This then moves down a throat passage (pharynx and esophagus) to the stomach, which is located directly below the rib cage and a little on the left-hand side. Except for alcohol, the stomach, which is *always* acid, does not assimilate food itself but churns it into a gruellike liquid and mixes it with hydrochloric acid and enzymes.

Widespread opinion to the contrary, the stomach seldom contains more than a small proportion of gas, even when one has overeaten of rich food. The gas that people complain of is actually air, usually swallowed in small amounts with their food (although some evidently gulp quantities of air as a nervous habit). The air is normally absorbed by the blood or passes through the intestines. When a sufferer takes bicarbonate of soda to rid himself of it, he actually *creates* gas in the stomach by mixing soda with acid (the stomach's hydrochloric). When he belches up this extra gas he customarily gets a feeling of relief. Similarly, "heartburn" is usually caused by a well-filled stomach's regurgitation of gastric juices or food fragments into the gullet or esophagus, and has nothing to do with the heart, which is unreachable by either gastric products or gases.

The muscular stomach by successive contractions and relaxations, a process called peristalsis, inches and heaves the food along into the small intestine, which is some 20 feet of alkaline tubing (everything is alkaline from here on) coiled in the middle of the abdomen. The small intestine fills most of the abdominal cavity. In it the food mixes with secretions from the adjacent pancreas, liver and intestinal glands and is then assimilated into the blood stream. When the stomach, which is larger than the small intestine, passes along to it food pieces that are spoiled, irritating or inconveniently large, the intestine's peristaltic action increases so vigorously that it hurts: the owner suffers cramps. People usually associate cramps with the stomach; they almost never occur there, but in the intestines. When a food fragment, for one reason or another, is simply too great a burden for the small intestine, the intestine sends a reflex signal to the stomach. The stomach becomes flabby and temporarily still, causing nausea.

Usually the process of digestion takes some four to ten hours,

CONTINUED ON NEXT PAGE

The alimentary tract, when it's not ailing,
Is an un-grand canal though fine for sailing

Of cocktails, lots; of soup a slurp;
A huge entrée—and so to burp

Attack of cramps: a cruel and rude
Test of intestinal fortitude

AFTER PLENTY CONTINUED

although fats may take longer and sugars much less. Finally the indigestible portions of the food go on to the large intestine, a shorter but wider tube which is festooned around the small one. In the large intestine water is absorbed and indigestibles are stored pending elimination.

Indigestion in itself is a relatively minor ailment, but medical science knows far less about it than it would like. Even the causes of bad breath and bad taste in the mouth, which are two of its manifestations, are not entirely known although they are associated with bad teeth, a slow-working stomach, belching and hyperacidity (overproduction of hydrochloric acid). There are five main types of remedy for indigestion, only two of which can safely be self-administered. Those who suffer from it regularly should know that while it may be the result of simple disorders or malfunctions, it might also signal peptic ulcer, gall bladder disease, cancer of the stomach or heart disease. Indeed, a sudden attack of acute indigestion *can* mean coronary thrombosis, acute appendicitis or gallstones.

The five remedies for ordinary indigestion are *antispasmodics*, which slow down an overactive stomach's motility, or decelerate its acid secretions; *sedatives* like phenobarbital, which primarily reduce "nervousness" and other psychic difficulties affecting the digestive tract; *digestants* such as hydrochloric acid, enzymes of the stomach and pancreas, and bile salts, which simply add to the natural secretions and help digest food; *antacids* like sodium bicarbonate, calcium carbonate and magnesium oxide, which neutralize acidity; and *protectives* such as bismuth salts, which coat the inside of the stomach and thus decrease the rate of acid secretion. It is only the last two with which the average individual should doctor himself, however, and then only upon occasion. If you suffer regularly from indigestion and your doctor has ascertained that you are otherwise in good health, there are several things for you to consider or act on.

One disturbance brings another

BEAR in mind that a lot of "chronic indigestion" is not caused by physical disease but by something deeply unpleasant in one's life; some authorities ascribe as much as 90% of such indigestion to this cause. For when human beings encounter something importantly disturbing in their life pattern—an uncongenial job, an unsympathetic husband or wife—this often causes a regular reaction in their digestive systems. In some it is an overproduction of hydrochloric acid, resulting in hyperacidity and sometimes ulcers; this is especially typical of tense, ambitious people. In others the effect is the reverse, the digestive processes slowing down with resultant gaseous indigestion and flatulence; such people are often lethargic and discouraged. In any case the prescription that will end their indigestion is not a candy-counter nostrum, but a new boss, a new basis of understanding with a mate, or a new attitude toward whatever other problems may beset them.

People who are less seriously afflicted, however, would do well to consider that the ingestion of food is one of the most pleasant

as well as one of the most necessary things in life, and that consequently to get pleasure along with nourishment it is important to:

▸ Postpone eating when you are tired, hurried or emotionally upset.

▸ Make a conscious effort to relax both before and after a meal.

▸ Make mealtime a period of friendly, light conversation and not, as at some family dinner tables, a time of rebuke, argument and punishment-meting.

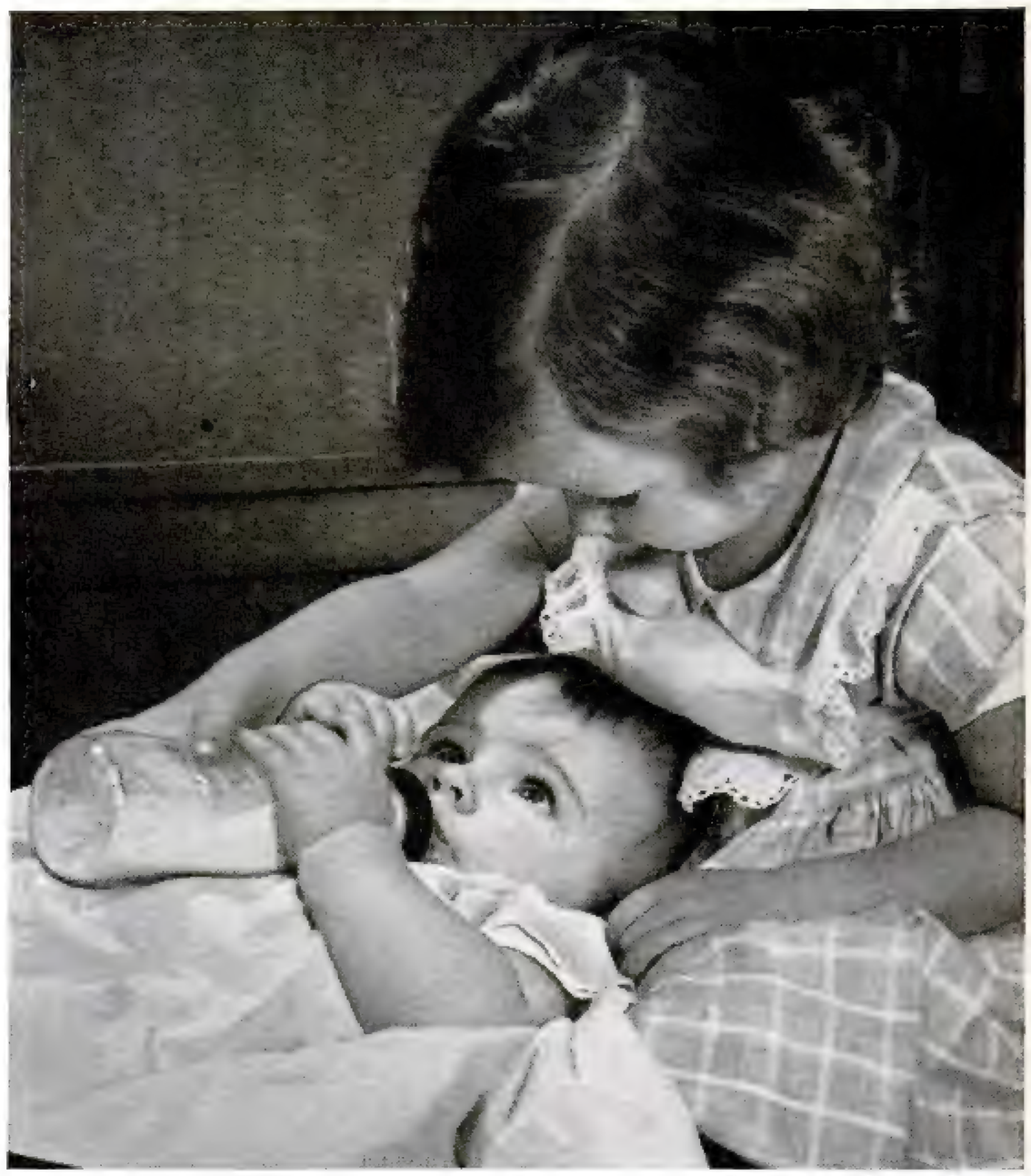
▸ Eat balanced meals, consciously *enjoy* your food (try clearing your palate as you eat with a bite of *rough* fresh bread, or a sip of wine) and always eat a little less than you want.

▸ For occasional mild attacks of indigestion you might try one of the protectives or antacids commercially available. But use them sparingly and cautiously, for any such specific can be harmful if used repeatedly or in quantity. And if it does not bring relief quickly, see a doctor.

Finally, if in spite of all this advice you still find yourself occasionally distressed by having availed yourself too freely of the nation's food resources, take heart as well as bicarb. At least you are in good company. A lot of famous people have suffered from stomach and digestive ailments of one sort or another. Darwin underwent torturous digestive difficulties most of his life, and so did Frederick the Great. Stomach trouble helped habituate Thomas De Quincey (*Confessions of an English Opium Eater*) to narcotics and, many critics believe, was largely responsible for the somber tone of Thomas Carlyle's philosophy. After Napoleon died on St. Helena his viscera were preserved, and modern examination of his stomach shows that he must have suffered terribly from an ulcer, which finally perforated the stomach wall, killing him. For decades the Little Corporal's hand-inside-coat pose has been accepted as a very symbol of supreme success and worldly well being. But some doctors today think that the familiar gesture was simply an effort to soothe an aching stomach.

When life within is less than placid
There's stomach-liner or antacid

Three ways to tell 1954 was a great year for America



1. Babies This year the stork really worked overtime! He delivered babies at the rate of 10,990 a day. That's enough new people to make a city the size of Akron, Ohio, *every single month*. What better proof that America is healthy and growing *fast!*

2. Savings This year Americans put more of their money into savings accounts than in any other year since the war. And where did they save? They put more of these hard-earned savings account dollars into insured Savings and Loan Associations than anywhere else. People know insured Savings and Loan Associations give excellent returns on their money. They know these friendly, home-town organizations are *safe*.

3. Homes Throughout the country in 1954 home owners outnumbered tenants by the widest margin of all time. Almost 6 out of every 10 families now own their own homes. Where do they get the mortgage money? A great many went to their insured Savings and Loan Associations! Right now these associations make one third of all home mortgage loans. Last year they were the nation's largest single source of mortgage loans for home building, buying and alterations.

THE FACT IS—the insured Savings and Loan Associations in your community are mighty good places for you to know about. Your savings are insured up to $10,000 by the Federal Savings and Loan Insurance Corporation—an agency of the U. S. Government. And these associations offer complete and really *expert* home mortgage services. Stop in soon at an insured Savings and Loan Association. You'll find it's a very pleasant and profitable place to do business.

SAVINGS AND LOAN
FOUNDATION

The Savings and Loan Foundation, Inc., is an organization of insured Savings and Loan Associations from coast to coast—dedicated to the preservation of democracy through thrift and home ownership in every American community. Address: Land Title Bldg., Philadelphia, Pa.

Look for this emblem. It identifies associations insured by the FSLIC.

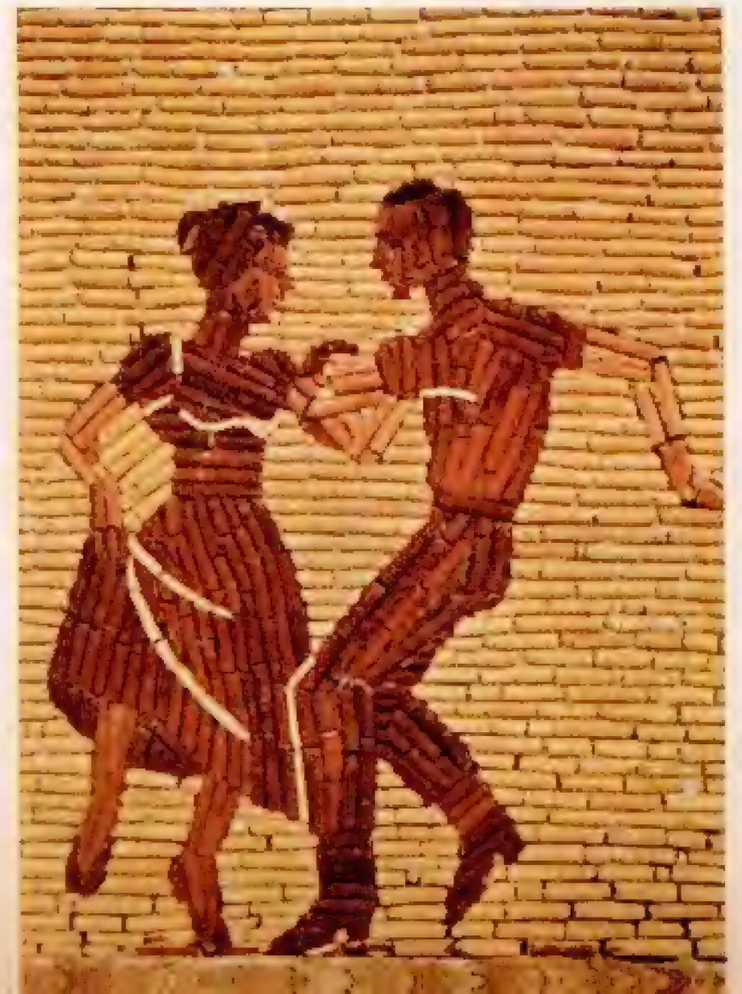
TOPPED BY GAUDY MINARETS AND DOMES, THE CORN PALACE IS DECKED OUT FOR THE FALL WITH MURALS OF SOUTH DAKOTA LIFE MADE FROM MYRIAD EARS OF CORN

THE WORLD'S CORNIEST BUILDING

With murals made of colored ears the citizens of a South Dakota town pay tribute to a crop

For generations Americans have celebrated the vast productivity of the land with Bunyanesque exhibits of food—cakes as big as cars, mountains of ice cream, scrambled eggs in a 14-foot frying pan. But the splashiest show of all is the gaudy Corn Palace in Mitchell, S. Dak., bedecked with mosaics made from colorful ears of corn. Since 1892 townspeople have gathered to nail ears in picture patterns to wooden panels on the palace walls. This fall's murals required some 50,000 ears, many specially grown for their color. The Palace opening and week-long festival of vaudeville and music drew nearly a quarter of a million visitors and netted Mitchell $22,000 profit. Though the festival is now over, there will be many winter visitors. For the Palace provides the world's biggest free lunch for birds, squirrels and mice, which flock to town from miles around.

DETAILS OF THE MURALS REVEAL THE MULTICOLORED EARS USED TO SHOW A COWBOY AND CALF, A COUPLE AT A SQUARE DANCE AND A HUNTER FLUSHING A PHEASANT



HOW BEEF GETS TO

The U.S. which once ate far more pork than beef has in the past two years become a beef-eating nation. Last year, of 30 billion pounds of meat consumed, including poultry, 13 billion were beef and 10 billion pork. To satisfy the demand for more and better-grade beef the meat industry has evolved

THE RANCHER, shown with a 4-month-old choice calf, usually keeps animals until they are 6 months old. In August 1954 choice feeders between 500 and 800 pounds sold at Kansas City for 20¢ a pound.

AGENCY MAN, first of several buyers, purchases steers from rancher. He works for sales agency which sells to feeder and gets about ¾¢ per pound on each animal. Steer at right weighs 650 pounds.

COMMISSION MAN, who usually has his office at the city stockyards, takes over the fattened steers from feeder and sells them to packers. For his services the commission man usually gets $1 per head.

BEEF-EATING NATION

a complicated but smooth flowing production line. Six of the major points are shown here. Each handler is at the mercy of constantly changing prices caused by fluctuations in supply and demand all along the line as the product moves in six months from a yearling on the range to meat on the table.

THE FEEDER keeps animal on concentrated rations five or six months, during which it gains two pounds a day. Last August in Chicago feeders paying about 20¢ a pound for calves got 24¢ for fattened animals.

THE PACKER beside butchered steer, having paid just over 24¢ a pound for 1,000-pound choice steer, sold 590-pound carcass to retailer for about 41¢. also sold by-products like hide, hoofs and bones.

THE RETAILER got about 67¢ a pound for the 450 pounds of cuts obtained from 590-pound carcass. Steaks are highest priced cuts because they are in greatest demand and constitute only 12.5% of steer.

HARVESTING AT DUSK, a lamp-studded metal monster rumbles through a sea of lettuce, dull green in the gathering darkness. Starting in the cool of evening, when the delicate heads stay fresh longer, the harvester and its crew of 30 work through the night to gather the perishable crop at its peak of perfection.

PICKERS UP FRONT on the harvester are borne along at four feet per minute. They feel head before cutting. Conveyors are between men.

LIT-UP LEVIATHAN FOR LETTUCE

Rig puts pickers on moving assembly line

The curious contraption shown all lit up in operation on the opposite page puts lettuce picking on a portable assembly-line basis. Face down in canvas slings up front lie 10 pickers armed with long knives. As the tractor-powered rig crawls forward, they snip off the ripe heads and toss them on conveyors which take the lettuce to women packers on the rear platform. They remove the frazzled outer leaves and put the clean heads in cartons to be hauled off by truck. Working as a team, the 30 people aboard this lettuce-field leviathan can pick, trim and pack 7,200 heads an hour.

A home-designed machine, the lettuce picker is the creation of Robert Chickering of Endeavor, Wis. For several years he was bothered by the costly and cumbersome chore of harvesting by hand. Pickers scattered all over a field proved tough to boss. They often picked poor heads, inevitably kicked dirt on his lettuce. Even with cheap labor, harvesting cost Chickering as much as 2¢ per head. With his machine, harvesting costs have been cut to less than half a cent a head. In just one season, says Farmer-Inventor Chickering, the $7,000 lettuce picker has paid for itself.

PACKERS IN BACK, aboard the huge machine, fill boxes which are then sealed with pneumatic stapler. Men behind are loaders waiting for truck.

How I feel about LIFE

LIFE seldom overlooks

When you are eighteen and you are singing for the first time on the massive stage of the Metropolitan Opera House, no words could tell how you feel. But a photograph could, and LIFE took it.

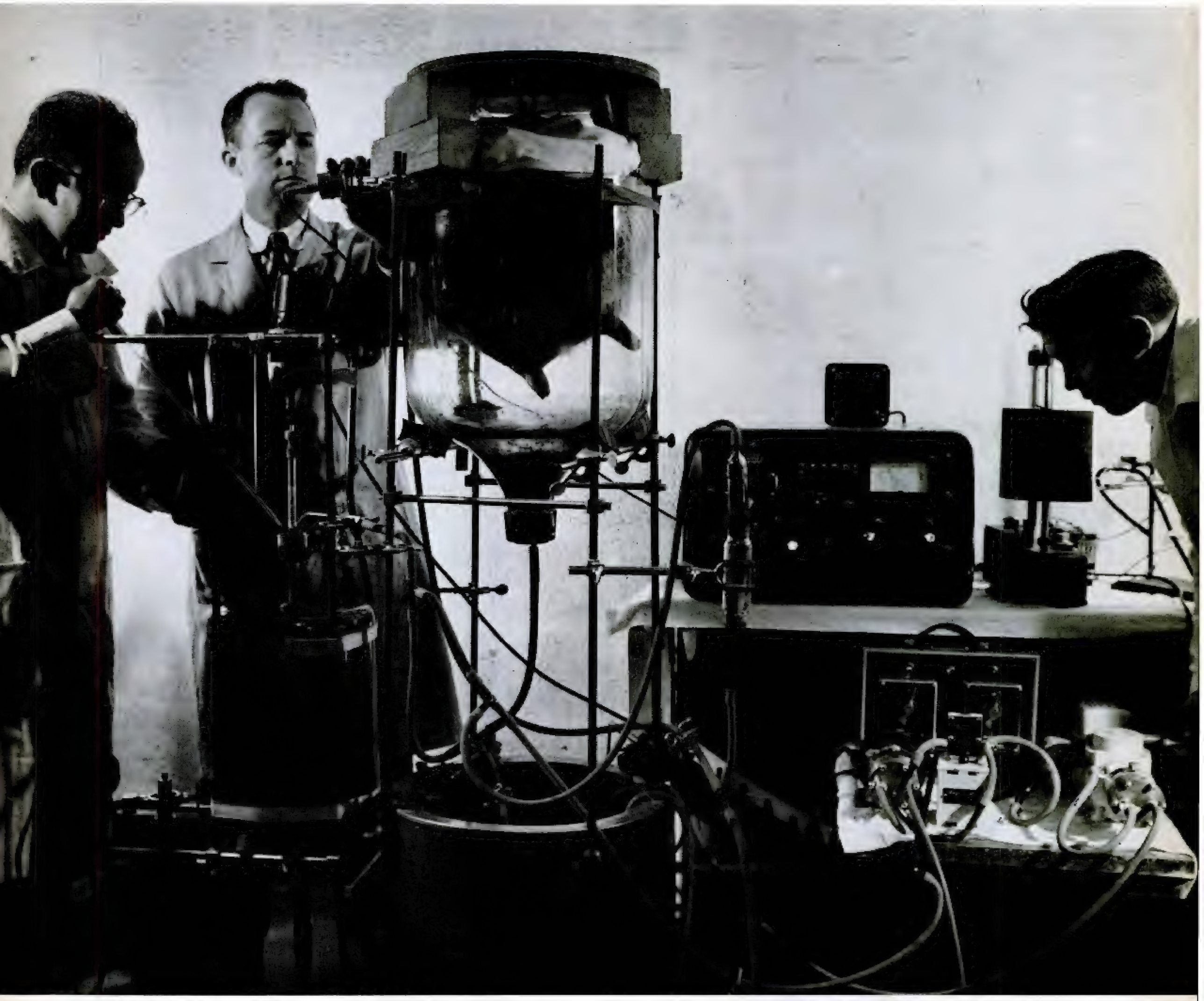
Back in February, 1944, a LIFE Photographer took a picture of me as I rehearsed my debut role in Mignon. But, instead of the hackneyed close-up of the typical flashing-eyed soprano, the photographer chose an extreme long-shot—a tiny figure lost in a vast sea of stacked scenery. You couldn't make out my features, but you sensed my lip was quivering, my knees knocking. And that week LIFE's readers had a chance to share quite intimately a young girl's moment of terrifying glory.

But certainly there were things to see in that issue much more vital than a scared ingenue. There were for instance a look at blacked-out London, a visit to a home for abandoned babies and front-line coverage of the fighting on Allied beachheads. And there, I think, is the attraction of LIFE for most readers—Its endless variety. It is at least for me.

LIFE's superb color reproductions continually whet our interest in Art. And as for fashion, I don't know how many times I have changed my hair-do after seeing a new style in LIFE. Then there is the news coverage, not just the big, important picture story that tells what is big and important in Berlin, Brussels or Washington. But the countless other stories that let you in on life in a New England mill town, the day the factory closes . . . or on a prospector's claim in Uranium country on the day he makes his strike.

LIFE's camera seems to be everywhere. At least LIFE seldom overlooks. I travel constantly. Yet I always see more of the world in LIFE.

PATRICE MUNSEL



MECHANICAL COW uses real udder in experiment by University of Maryland's Joseph Shaw to discover what chemicals produce milk. It is nourished by blood circulating through oxygen-filled jar (*left*) which replaces cow's lungs, and a pump (*lower right*) which replaces the heart. Udder will yield milk for four to six hours. A Geiger counter (*right, on table*) follows course of radioactive chemicals which are dripped into bloodstream (*left*).

SEARCH FOR A FUTURE OF PLENTY

U.S. looks to its scientists to keep the country's food supply increasing as fast as the population

In their pride at being the world's most elaborately fed nation Americans often assume that the bounty of their native soil is boundless. But the frontier of the land has virtually disappeared: the amount of arable land in the U.S. reached its practical limit of 462 million acres 30 years ago, while the people which it must support go on multiplying at a rate of 2.7 million a year. Confronted with the dilemma of fixed acreage and an expanding population, the U.S. is pushing deep into the new frontier of agricultural research.

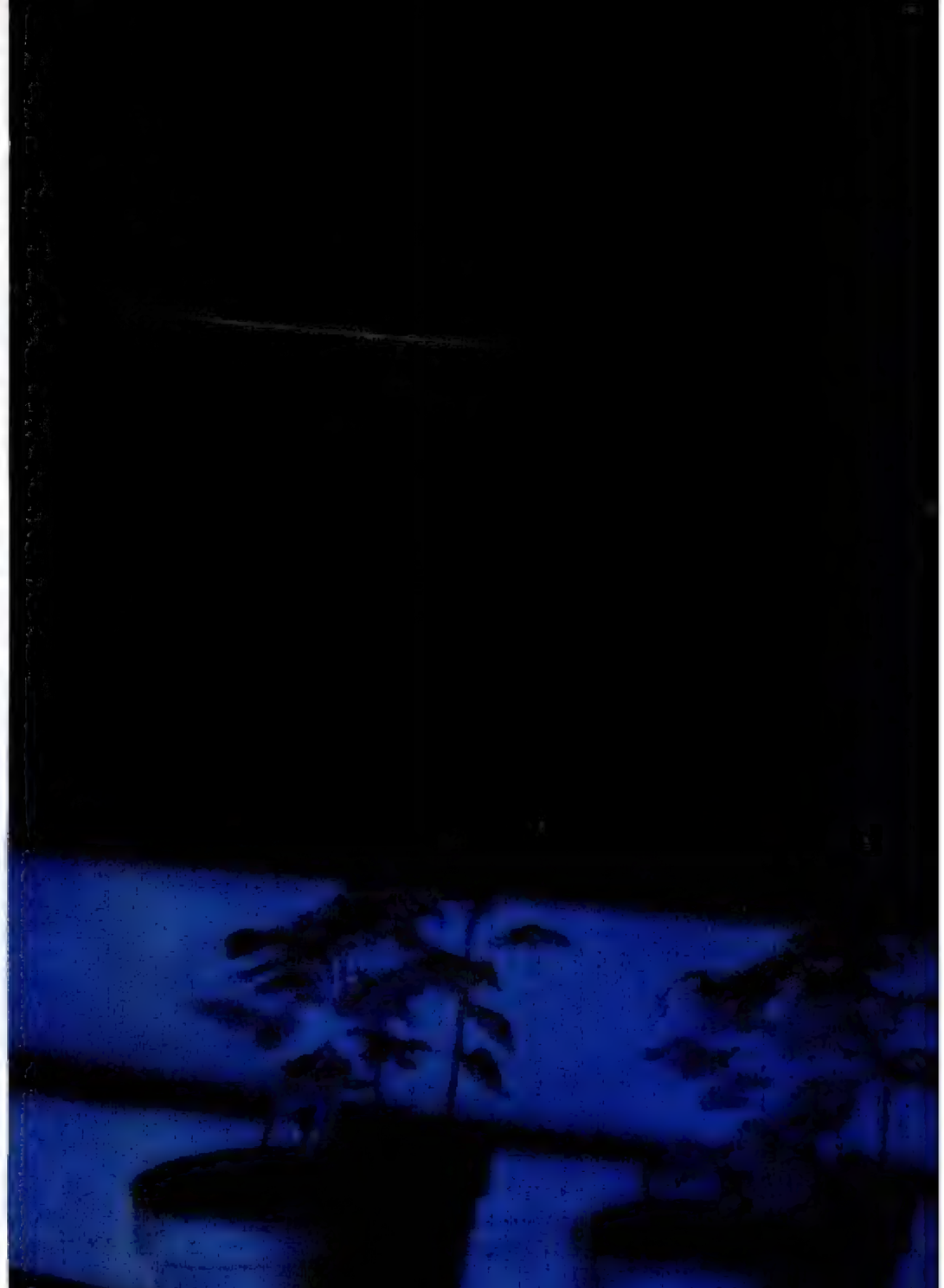
Scattered through scores of government and industrial laboratories, at land grant colleges and Agriculture Department experiment stations, some 25,000 scientists are spending $250 million a year of public and private funds on experiments to find how to wrest more nourishment from existing farmland. So far, with revolutionary developments like hybrid corn, they have succeeded in keeping pace with the nation's growing demands and have even filled its surplus bins to overflowing. But in another 20 years the U.S. will require another 30% more food than it produces today. To find out how to increase the food supply still further, scientists are entering entirely new realms of research, in which familiar and reassuring living forms are incongruously wedded to the chilly skeletal shapes of modern laboratory apparatus (*above*). The pictures on these pages illustrate some of the curious, often colorful paths science is exploring and the surprising results it has already reached in its effort to make certain that the U.S. continues to be the land of plenty.

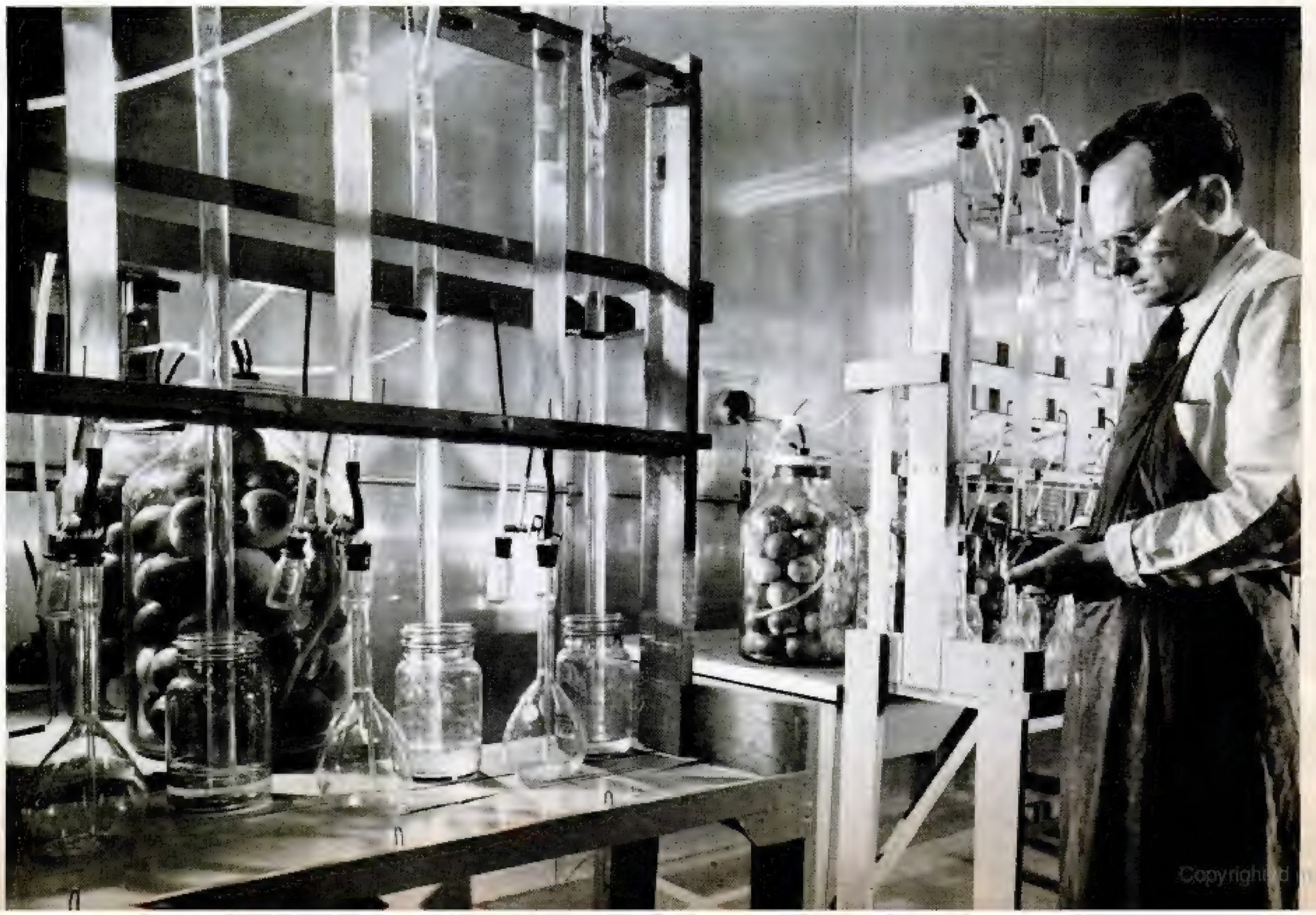
CONTINUED ON NEXT PAGE

IRRADIATING POTATOES with high energy electrons from a generator, General Electric researchers kill germs which cause them to decay in cold storage.

THE STUDY OF WASTE AND TASTE

Agricultural scientists, concerned with developing crops which are hardier and more resistant to disease and pests, also look for better ways to preserve the food already being grown: 30% of the nation's entire agricultural produce is now lost through poor handling and marketing between the farmer's field and housewife's kitchen. In their search for new ways of preservation they are using every tool they know, from electron beams (*above*) to human taste buds (*opposite page*). Sometimes the pursuit of practical goals leads scientists to explore such esoteric subjects as the basic problems of growth and life itself (*above and pp. 86–87*).





TESTING APPLES, Pomologist (apple scientist) Robert Smock of Cornell University seals apples sprayed with pesticide in jars to measure how fast they give off carbon dioxide. Some sprays, he finds, actually preserve fruit.

LIGHTING PLANTS with a spectrum projected in total darkness, Physiologist Harry A. Borthwick of the government's Research Center in Beltsville, Md. notes how red light aids growth in some plants, hinders it in others.

TASTING YAMS, volunteers in New Orleans try to tell difference between dehydrated and normal vegetable. Since color affects taste, judgment table is bathed in red light to make yams, which are orange, yellow or brown, look alike.

LIMITLESS SEARCH

While the greater part of scientific food research today is devoted to solving immediate and specific problems like packaging and preserving, almost all of this applied work depends ultimately on what is known as basic research. Before World War I the U.S. relied largely on European scientists for inquiry into the fundamental physical and biological truths of agriculture. Today, with many of the European wellsprings dried up or less able to keep up scientific production, the U.S. Department of Agriculture puts 13% of its total scientific effort into basic research, and most experts think the country should raise the figure substantially to prevent applied research from being preponderantly a hit-or-miss affair.

Basic research can lead down any number of limitless pathways. One line explores the essential properties of food and can lead to such things as an investigation into the smell of strawberries (*opposite*). Another probes the natural forces which produce change in food structure, involving experiments with molds (*below*) or an examination into decay (*bottom, right*). A third and potentially far more important path leads to measuring and then manipulating the forces governing food growth

HOW PLANTS USE ENERGY to make food, a natural process called photosynthesis, is studied at the California Institute of Technology under a $10,000 grant from General Electric. Researchers are trying to find out in what ways the different colors of fluorescent light affect photosynthesis.

HOW MOLDS ACT is examined in culture dishes at U.S. laboratory in Peoria, Ill. In dish at top left a penicillin mold produces branches of protoplasm.

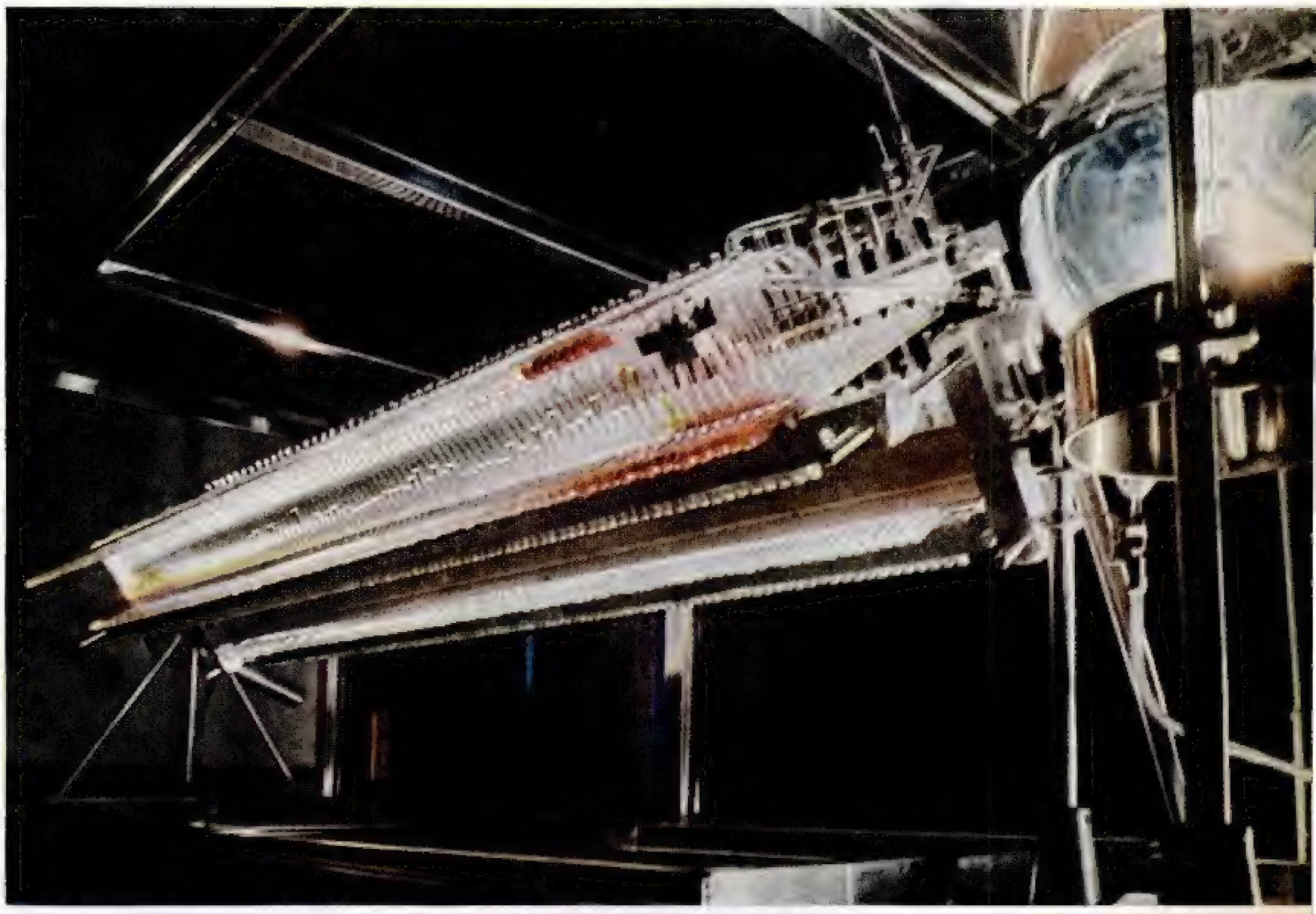
FOR BASIC TRUTHS

and production. This includes varying the amount of sunlight cast on plants to change their cycle of growth, or pondering the life-giving effects of sunlight that brings to the plants such nutritive elements as sugar or starches (*opposite*).

Although it is usually thought of as pure inquiry far from the commercial world, basic research often produces new foods or substances, such as fertilizers or insecticides, that are quickly marketable. In a dramatic example of basic research, the Department of Agriculture's Research Center in Beltsville, Md. recently found it had developed in its turkey department a phenomenon known as parthenogenesis, a process by which an embryo develops from an egg which has not been fertilized. This process has never been found in so high a form of life, and although the embryos formed through parthenogenesis do not now develop fully, the revolutionary discovery opens up huge possibilities of increased production. It is discoveries of this kind which lead imaginative scientists to predict that within the next 50 years Americans will have for their table a host of new foods not only more nutritious but radically different from those known today.

WHY STRAWBERRIES SMELL is explored at a government laboratory in Albany, Calif. which collected and distilled essence element from 12 tons of strawberries until it became a concentrate weighing two thirds of an ounce. From this, scientists hope to bring flavor uniformity to commercial strawberries.

At top right is a mold that appears on jellies, lower left a mold which produces citric acid. Yeast at bottom right may be source for proteins, fats, vitamins.



WHY PRUNES TURN BROWN when exposed to the air is the subject of a complicated experiment at the Albany, Calif. laboratory. Prune juice is sent through successive tubes and the different chemical elements are withdrawn from it until ultimately the juice's browning elements are isolated (*left*).

CONTINUED ON NEXT PAGE

CHEAPER SUGAR has been a 10-year project of Department of Agriculture and private industry. Being tested for government by Candymaker Fred J. Fahs of New Orleans (*above*), sugar will cost ½¢ a pound less than normal granulated.

SEEDLESS WATERMELON was grown by Purdue horticulturists who applied colchicine, chemical which doubles chromosomes, to melon vines, then cross-bred result with normal melons. Seeds get larger and fewer, eventually disappear.

POWDERED FRUIT JUICES of apple, tomato, orange and grape are piled up in 10-pound mounds as they emerge from big chromium ovens of the Department of Agriculture laboratory in Albany, Calif. Developed primarily for the Armed Forces, which have already tested the powdered orange juice, the new powders may be available commercially this year and if so could become popular because they retain the necessary vitamins and the fruity taste of the original juices.

HANDIER FRUITS AND MORE MEAT

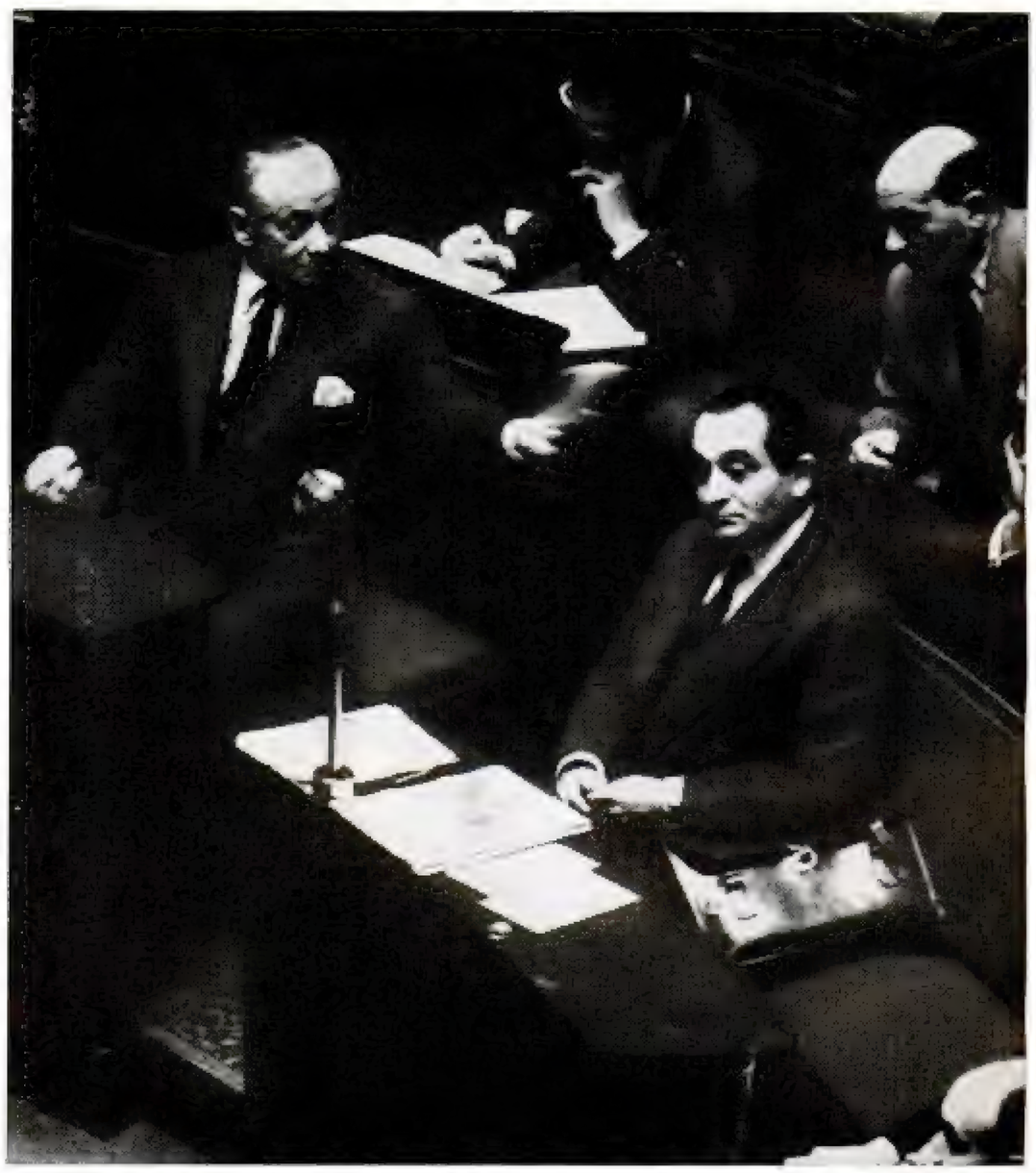
Past research is already paying dividends in more plentiful and varied food. The citrus fruit industry, for example, already revitalized by the introduction of frozen concentrates, will be boosted further by a new method of powdering fruit juice (*bottom, opposite page*). But the most exciting developments are in livestock. When mixed with feed, antibiotics are already known to ready hogs for market 6 months ahead of schedule (LIFE, Oct. 12, 1953). Now another substance has been found which makes them grow faster still (*above, right*). Beef production can be increased by a development at Wooster Ohio Agricultural Experiment Station. Until now the only method of producing high-grade beef has been to castrate bull calves, which improves the meat but stunts the animal's growth. Now female hormones have been found which de-sex calves but permit them to grow into full-sized bulls. All these improvements, if they were adopted by farmers everywhere, could increase the U.S. meat supply by five billion pounds a year.

FAT, FATTER, FATTEST pigs were raised at Chas. Pfizer & Co. research farm in Terre Haute, Ind. Center pig, fed on terramycin-enriched diet, grew 12% faster than pig on regular diet (*left*). Another substance, as yet unidentified but named Vigo Factor, has made pig at right grow another 14% faster.

A PELLET OF FEMALE HORMONE, STILBESTROL, LODGED IN THE EAR OF A 5-MONTH-OLD BULL CALF, WILL FATTEN IT WITH MARKETABLE BEEF AS IT GROWS INTO A MATURE BULL

RETURNING TO HIS CELL, Dr. Samuel Sheppard is led by a guard (*left*) after verdict. Most of the jury in their 102-hour-long deliberations had not doubted that the doctor killed his wife but had differed on the extent of his guilt. Sheppard faced a life sentence which, if he is paroled, could last only 10 years.

AWAITING THE END, Dr. Laughead stands in Oak Park, Ill. with Mrs. Dorothy Martin, whose messages from "outer space" prompted him to make his prediction. Until two weeks ago a physician at Michigan State University, Laughead was dismissed because, as officials said, his predictions upset student body.



AWAITING A VOTE, Premier Mendès-France (*foreground*) sits stoically in French Assembly as ex-Premier Reynaud gestures across aisle. A Reynaud-led abstention movement, plus M.R.P. opposition, handed Mendès a first-round defeat on German rearmament. He then staked the issue on a confidence vote.

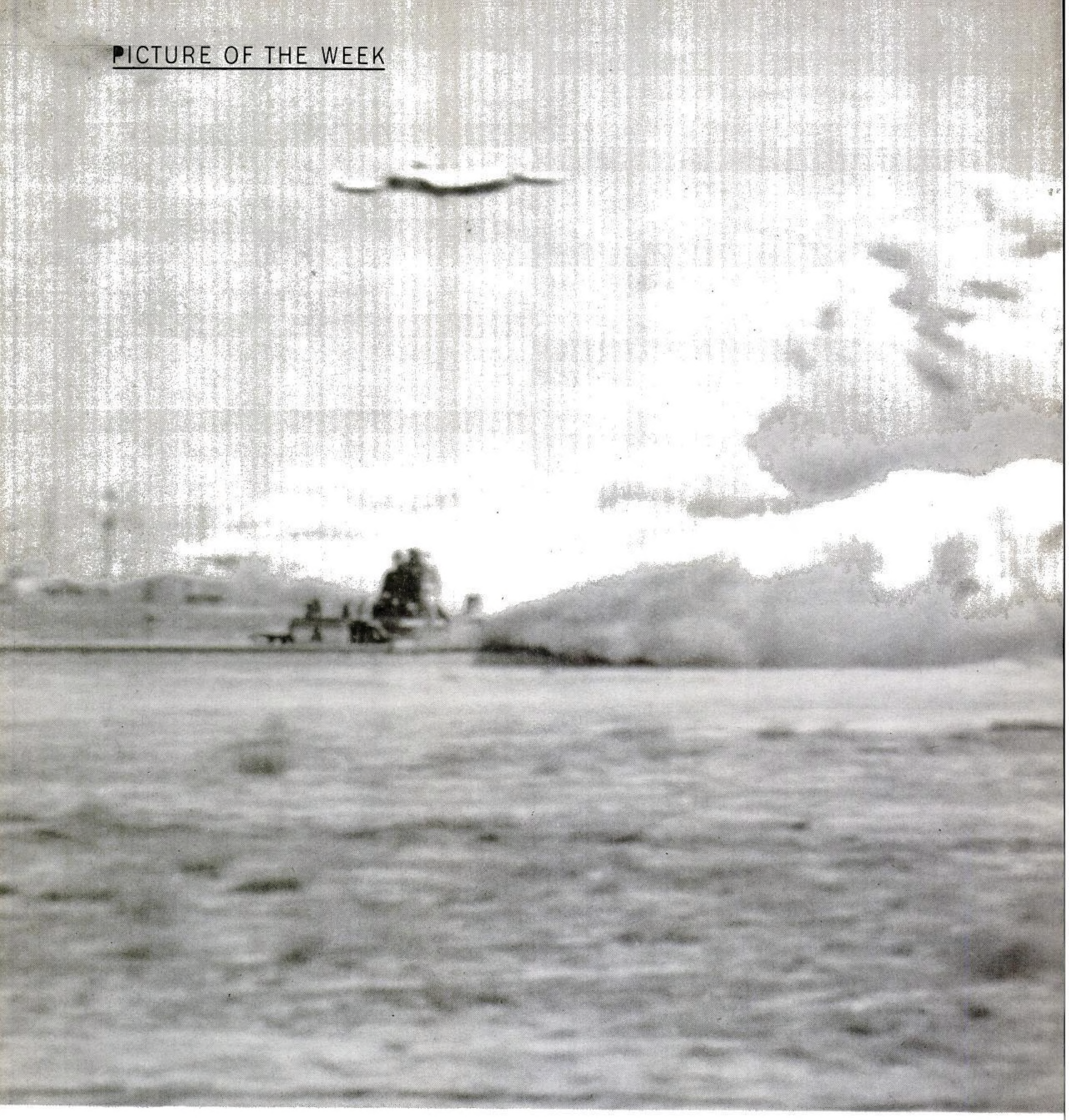
VOTE, VERDICT AND A VISION

In spite of some ominous notes, world survives a pre-1955 week

While breakfast, lunch and dinner followed each other for the normal citizen of the globe last week, he was aware, between meals, that some of his fellow humans faced interruptions in the customary rounds of their lives.

In Oak Park, Ill., Dr. Charles A. Laughead waited for the fulfillment of his prediction that on Tuesday a tidal wave would engulf the Midwest with destruction of the world following in 1955. Tuesday passed and Laughead's feet were still dry. In Cleveland, Dr. Samuel Sheppard heard a jury convict him of murder in the second degree. In Paris the Assembly threatened to kill German rearmament, on which depends Western defense and the political future of Premier Mendès-France. And in California, almost as if Dr. Laughead decreed it, chandeliers jingled, walls creaked and the earth split asunder in the severest earthquake since 1906.

INSPECTING A CLEFT, cab driver kneels down on road in Eureka, Calif., one of the centers of the earthquake. Heaviest shocks were felt in northern Nevada but tremors disturbed places as far away as San Diego, Calif. and southern Oregon. At Salt Lake City a seismograph broke under the shocks. In Eureka one resident, remembering Dr. Laughead, ran down the street crying, "It's the end of the world."



THERE GOES THE FASTEST MAN ON THE FACE OF THE EARTH

At the Holloman Air Force Base in New Mexico, Lieut. Colonel John P. Stapp sat strapped in a rocket-propelled sled. The nine rockets went off and, after five seconds and 2,800 feet, the sled was screaming along the track at 632 mph, about 125 miles less than the speed of sound, and the fastest man has ever traveled on land. Then the sled hit a water trough (*above*), throwing up huge white spumes and in a fraction over a second had stopped dead. The ride subjected Stapp to wind pressure of more than two tons and deceleration equal to 35 times the force of gravity.

For nine months, using this same sled, Colonel Stapp has been undergoing a series of sudden stops. The purpose of these severe tests (LIFE, June 14) made by the Air Research and Development Command is to determine what precautions can be taken to help jet pilots survive the terrific impact of bailing out at supersonic speeds. In his harrowing 632 mph record run Colonel Stapp wore only a helmet and visor besides the standard air crewman's gear. His only injury: a few blood blisters and two black eyes caused by his eyeballs pressing against his lids.

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